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**AWR 100
Stick Reader
V1.3**

Firmware 1.22 and later

PC-Demosoftware 1.09 and later

V27/02/08

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1. Preparing for Use



Figure 1: AWR100 Stick Reader

The AWR100 Stick Reader is shipped with one rechargeable battery pack, one RS232 cable (1,5m), one power supply for trickle charging, two eartag transponders (one FDX-B and one HDX) and AWR100 demo software.

Before starting it is recommended, to charge the battery pack completely. This can be done by using the power supply for trickle charging (takes min. 16 hours) or the external fast-charging station (see chapter 1.1).

1.1 Accessories

- Bluetooth end cap, Bluetooth USB dongle and CD with software included
- External fast-charging station plus one battery pack
- Battery pack
- RS232 end cap
- RS232 cable (1.5m)
- Cigarette lighter charging cable (for trickle charging only, 12V with voltage limiter)



Figure 2: Accessories



Figure 3: External charging station plus one battery pack

The power supply can vary country-specific.

1.2 Stick Reader Interface and signalling

Parameter	Setting
Red LED	The red LED is flashing during the Stick Reader tries to read transponders. This feature can be disabled or enabled with AWR100 demo software.
Green LED	The Green LED is flashing after a transponder was read. This feature can be disabled or enabled with AWR100 demo software.
Beeper	The Beeper is beeping after a transponder was read. This feature can be disabled or enabled by AWR100 demo software.
Blue LED	The blue LED is used for several events (e.g. transponder was read, low battery warning).
LCD display	On the LCD display all necessary information's are displayed (e.g. data of read transponder, ready to work, menu items).
Read button...	...is switching the reader on. ...starts reading. ...enters the menu by double pressing, if the AWR100 is switched on.
Screw on end cap	Changing battery pack and or end cap
Cable connector	Interface for transferring data between Stick Reader and PC and for trickle charging via RS232 cable

1.3 Installing or changing the battery pack

If the Stick Reader is used for the first time, the battery pack has to be installed first.

	Caution! Improper installation of the battery pack can cause an explosion. Dispose of exhausted rechargeable and non-rechargeable batteries must be compliant with the your local laws. To ensure proper compliance is entirely the responsibility of the owner and/or user of the Stick Reader.
	Caution! The Stick Reader may only be used with the Agrident standard rechargeable battery pack ARB100. Using different cell types might destroy the reader and will lead to the loss of warranty.

Turn the screw of the end cap anti clockwise.



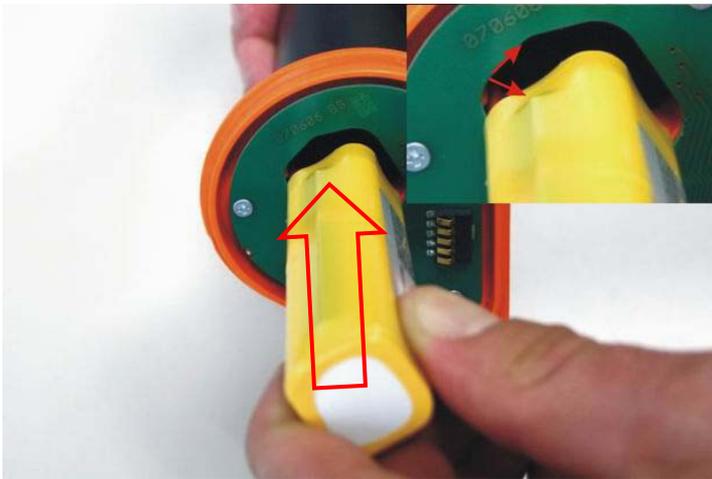
Remove the end cap.



Remove the old battery pack.



Install the new battery pack.



Attach the end cap to the reader and turn the screw of the end cap clockwise.



The screw has to be fastened completely, otherwise contact problems can occur!

2. Trickle charging the battery pack

Full charging takes at least 16 hours (longer charging time is allowed).
Connect the RS232 cable to the RS232 end cap.

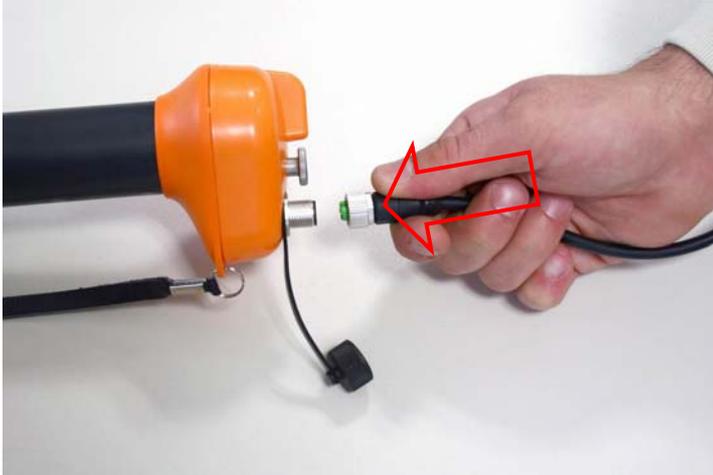


Figure 4: Attaching the RS232 connector

Plug in the RS232 connector into the jack of the RS232 end cap and turn the connector clockwise.

From the point, where the green indicator ring appears, the connection is correct and IP67.

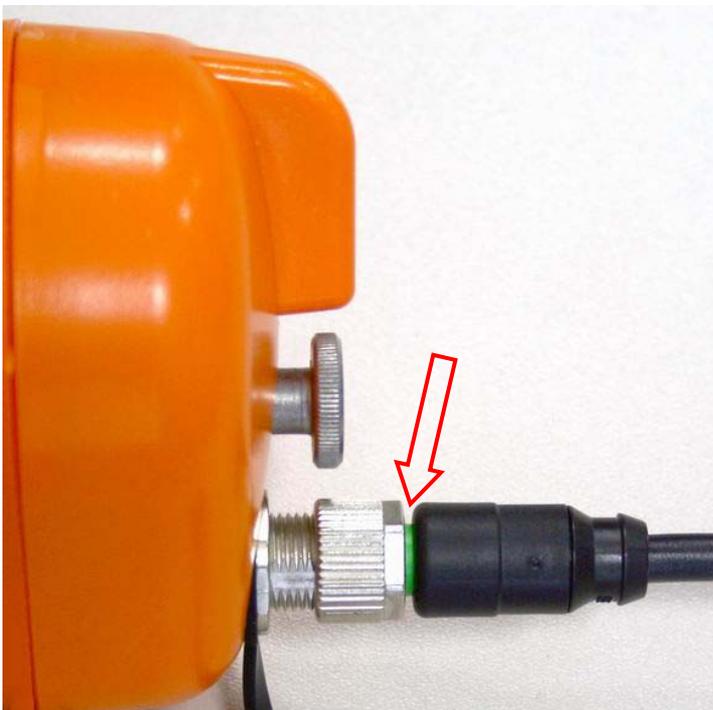


Figure 5: Indictation of a correct connection

Connect the power jack of the RS232 cable to the power supply for trickle charging.



Figure 6: Connections and accessories for trickle charging

The power cord can vary country-specific.

3. Battery pack fast charger

For faster battery charging an external charging station is available.



Figure 7: Battery pack fast charger The power supply can vary country-specific.



Figure 8: Battery pack fast charger with battery pack

4. Controlling the Stick Reader

4.1 Switching on the Stick Reader

In the off state, the Stick Reader is separated from the battery. Only a few parts (e.g. the internal real time clock) are supplied by the battery. Nothing is displayed on the LCD display in this case. In order to activate the Stick Reader, the Read button must be pressed for a short time.



Figure 9: Activate the AWR100 by pressing the read button

If Bluetooth is activated, the internal Bluetooth adapter is initialised after switching on.

It can take a few seconds until the Bluetooth connection is established. Nevertheless the reader can work normally and the connection is made in the background. That means, you can start reading transponders immediately but they are not send via Bluetooth until the connection is working. After switching on, the reader is setting a marker and thus it remembers all transponders, which have been read from the moment of power on. As soon as the connection is ready, the AWR will send all these transponders via Bluetooth.

After Stick Reader is ready to work, the following text appears on the LCD display:



If Bluetooth is activated and connected, a Bluetooth symbol appears on the right side of the second line of the display.



The backlight of the LCD display is normally off. If no action is happening, the Stick Reader will power down after a certain time. This time is configurable from 5 seconds to 600 seconds.

4.2 Reading transponders

4.2.1 Reading transponders after the AWR is ready

Wait until



appears on the LCD display.

Press the read button until



appears on the LCD display. Now release the button.

The AWR100 starts to read transponders for a certain time, which is also configurable (see chapter 5.2.2 – “Configuring the reading time”).The reading procedure is signalled by a red flashing LED. Furthermore a progress bar appears in the second line of the LCD display.The flashing of the red LED can enabled and disabled with the configuration software.

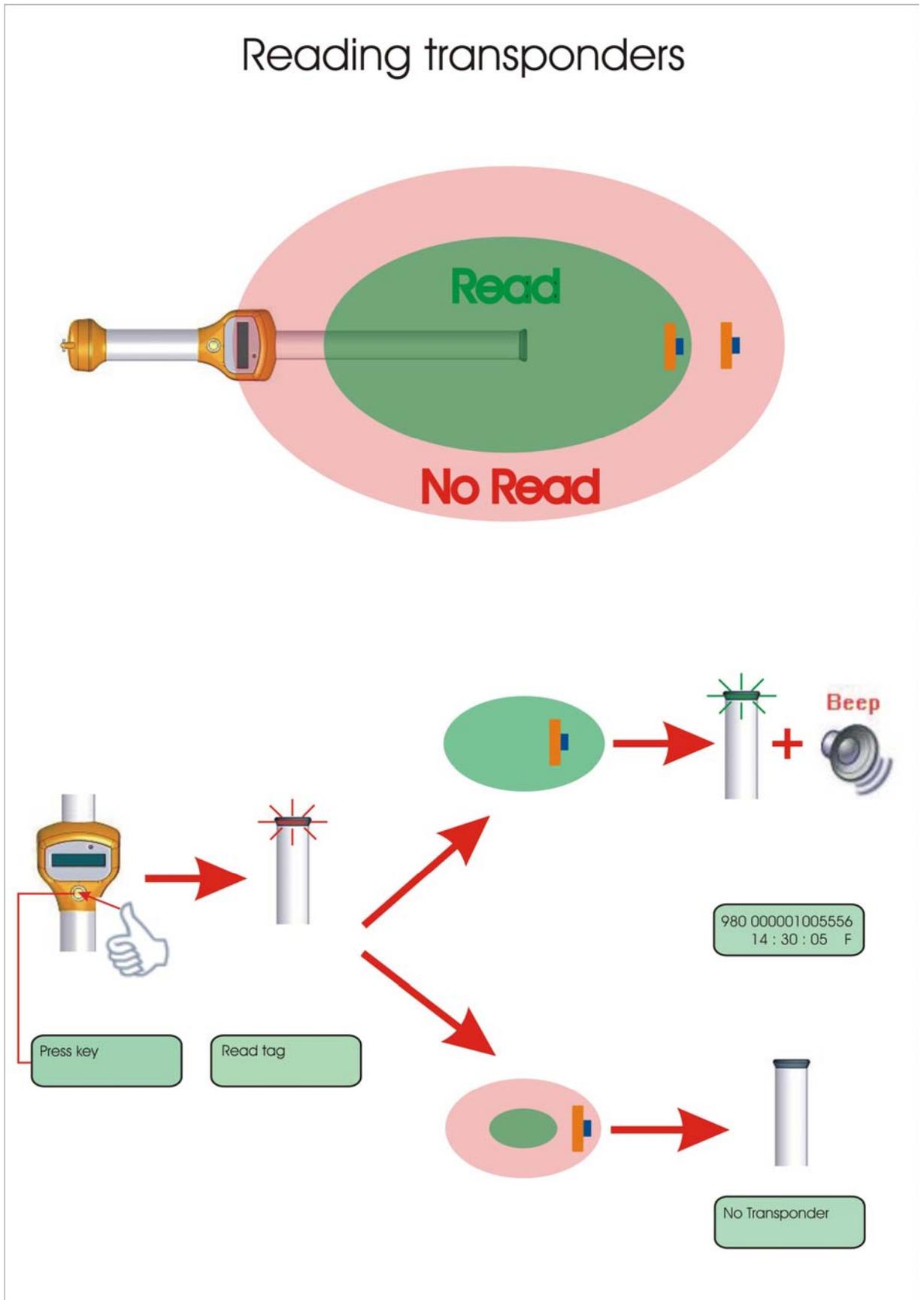


Figure 10: Reading Transponders

If no transponder has been read, the following message appears on the first line of the LCD display:

```
No transponder
```

During displaying this message the backlight of the LCD display is on. If a transponder has been read, the reading procedure is aborted immediately. A successful reading is signalled by a green flashing LED at the top of the Stick Reader, a flashing blue LED above the LCD display, and the beeper. The green LED and the BEEPER can be enabled and disabled by configuration software.

In the first line of the LCD display, the transponder number is displayed in decimal format. In the second line the time and the transponder type are displayed. "F" is standing for FDX-B and "H" means HDX.

```
984 010900316360  
12:41:26 F
```

If an event is assigned to the read transponder (currently only 30 transponders can be assigned to an event), the event and the time are displayed alternating in the second line of the LCD display.

```
984 010900316360  
12:41:26 F
```

```
984 010900316360  
Selection
```

Transponder data plus time and event will be transmitted to the PC via serial interface or Bluetooth and can be displayed there. Simultaneously transponder ID and time are stored in the internal database of the Stick Reader (without the event). If the key is pressed, while an event is detected, the string "ok" appears after the event string. The Data will be transmitted to the PC again.

```
984 010900316360  
Selection ok
```

If no event is assigned, the data are displayed for approximately seven seconds if the key is not pressed. After displaying the transponder data, the "Press key" string appears again:

```
Press key
```

4.2.2 Reading transponders immediately

If the AWR100 is switched off, press key until text



appears on the LCD display.
Reading procedure is similar to chapter 4.2.1.

4.3 Reading range depending on the transponder orientation

Ferrite antennas have the following characteristics of flux lines:

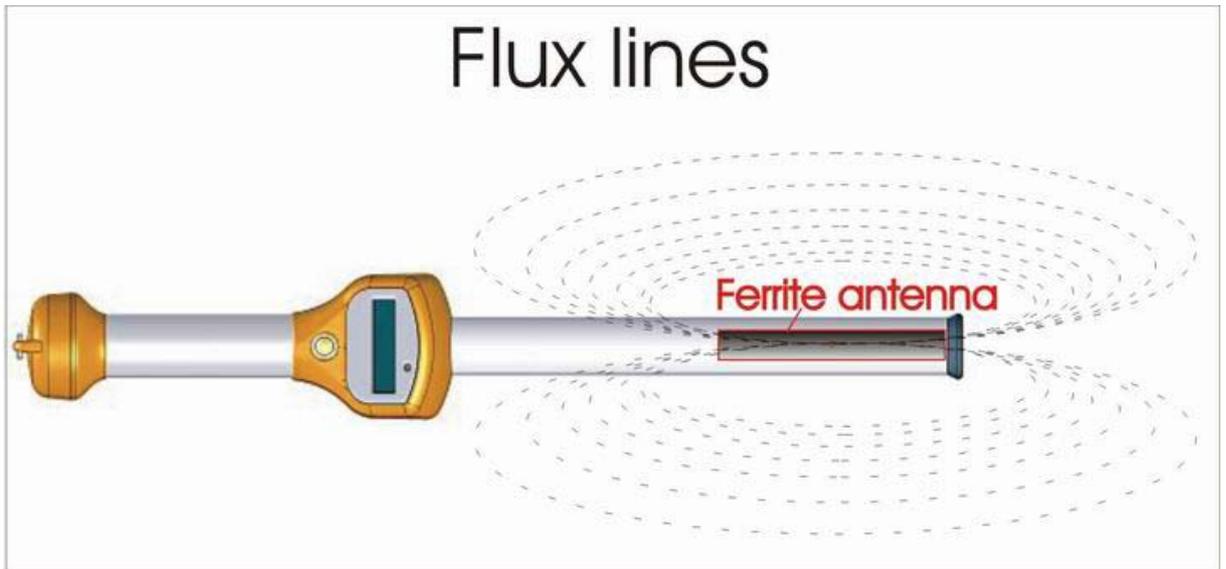


Figure 11: Flux lines

Thus the following best reading orientation for transponders results:

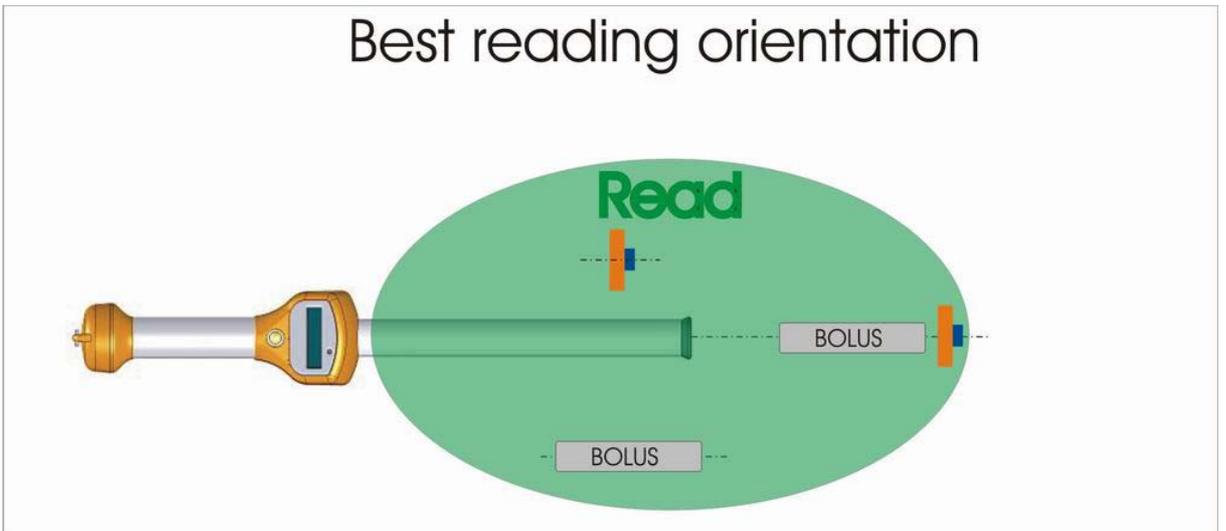


Figure 12: Best reading orientation

Accordingly there are is also a worst reading orientation:

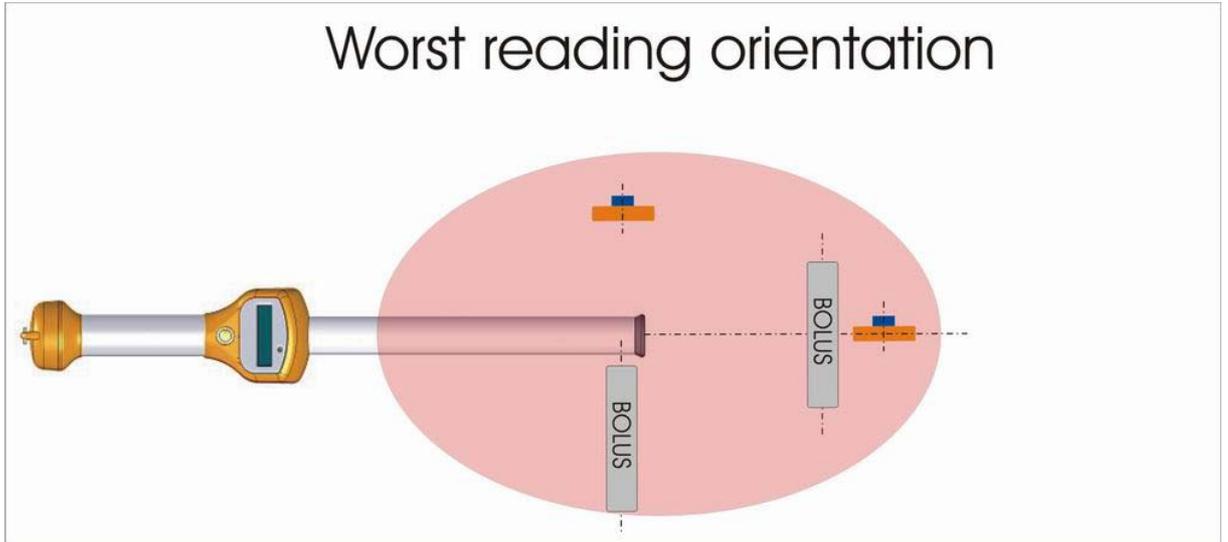


Figure 13: Worst reading orientation

4.4 Using the function menu

After the message

Press key

appears on the LCD display, the menu of the reader can be entered by double pressing the read button. First the status informations of the AWR100 are displayed. Press the button again in order to change to the next menu point. If the button is not pressed within 3 seconds the function menu will be left automatically.

4.4.1 Version

On the first line of the LCD display the current software version of the AWR100 appears:

Agrident V1.22

4.4.2 Date/Time

On the second line of the LCD display the current date and time is displayed first:

Agrident V1.22
07.01.08 12:30

If the time does not correspond with the current time, the real time clock has to be synchronised.

4.4.3 Battery

Now the status of the battery is displayed in the second line of the LCD display. The status of the battery is not an absolute value.

```
Agrident V1.22
Battery ...
```

The number of displayed points is an information about the status of the battery. One point up to six points are possible. If only one point is displayed, the battery is almost empty. This indicates, that the battery should be replaced soon or has to be recharged.

4.4.4 Stored datasets

Now the number of read transponders is displayed:

```
Stored datasets
5/ 138/5000
```

The first number represents the animal counter of the current group (in this example 5). The second number represents the sum of all stored datasets including group separators (in this example 138). The last number represents the amount of datasets which can be stored on the Stick Reader (5000).



The ARW100 memory allows to store 5000 datasets. If 5000 transponders and separators were stored, the datasets must be cleared before new transponders can be read.

If 5000 datasets already stored, and a new transponder is read, the following information appears on the LCD display:

```
Database
Out of memory
```

4.4.5 Bluetooth

This option is only available, if the Bluetooth adapter is connected to the AWR. The status of the Bluetooth interface appears on the second line of the LCD interface (on or off):

```
Agrident V1.22
->Bluetooth on
```

The arrow in front of the status is an indication, that this status can be changed by long press (long press means approximately 3 seconds). In this case the Bluetooth interface is deactivated by pressing the key and the following message appears:

```
Agrident V1.22
->Bluetooth off
```

If the key is pressed for 3 seconds again, the Bluetooth interface is activated again. Switching off the Bluetooth module minimizes power consumption and increases the operating time of the battery pack. This option is useful if the Stick Reader is only used for sampling transponders, and the stored datasets will be read out later in the office.

4.4.6 Pairing

This option offers an automatic way of pairing of the readers Bluetooth module with other Bluetooth devices. The advantage of this method is, that you do not need to know the address of the opposite module. A Bluetooth environment is needed for this way of pairing.

This pairing option is not needed, if the configuration software is used. Here it is possible to send the number of the opposite module to the reader via RS232. The third Bluetooth option is to use the readers Bluetooth module as a Bluetooth slave. In this case the reader doesn't try to connect automatically, but will wait for connection requests.

For further details see the "AWR100_Bluetooth_manual.pdf", which is on the delivered AWR100 CD.

4.4.7 Reset Config

The following text appears on the second line of the LCD display:

```
Agrident V1.22  
-> Reset config
```

The configuration of the Stick Reader can be reset to the factory settings by long press. After a successful reset of the configuration to the default settings

```
Agrident V1.22  
Done
```

appears on the second line of the LCD display.

4.4.8 Online / offline mode

The Stick Reader provides an online- and an offline mode. In online mode the transponder data are transmitted immediately via RS232 interface or Bluetooth and additionally stored in the internal memory of the reader. In offline mode the data are only stored in the database of the AWR100 but not transmitted to the interface. If the Stick Reader is in online mode, the following text appears on the second line of the LCD display:

```
Agrident V1.22  
->Online mode
```

If the Stick Reader is in offline mode

```
Agrident V1.22  
->Offline mode
```

appears on the LCD display.

The mode can be changed by pressing the read button for approximately 3 seconds.

4.4.9 Next Group

It is possible to separate groups of transponders by inserting a new group pattern in the database of the AWR. In this case the reader stores a zero transponder at the current position of the database and the animal counter is automatically reset to zero. For this option the following text appears on the second line of the LCD display:

```
Agrident V1.22
->Next group
```

A new group is inserted by long pressing the read button while “Next group” is displayed.

4.4.10 Show last IDs

This option allows you to display the last transponders since the reader was switched on. Up to three of the last transponders can be displayed. Press the button for a longer time while “Show last IDs” is displayed.

```
Agrident V1.22
-> Show last IDs
```

If no transponders were read after switching on the Stick Reader the following text appears on the LCD display:

```
Agrident V1.22
No IDs available
```

Otherwise the last read transponders are shown.

```
984 010900316360
      12:41:26  F
```

4.5 High power mode

If the reading range is too small for the application, the high power mode can be activated via configuration software. In high power mode reading range increases, but the power consumption as well! That means a shorter operation time for the battery. If high power mode is selected, the string “HP” is displayed additionally to “Read tag”.

```
Read tag HP
```



The high power mode increases the reading range for HDX transponders up to 20 percent compared to low power. For FDX transponders it is less. The power consumption in high power mode is about three times higher, than in low power mode!

4.6 Permanent Read

If lots of transponders have to be read within a short time, the AWR offers a permanent read mode. In this mode the reader is activating the reading function for a certain time independent of a successful read. The permanent read settings can be changed using the configuration software (see chapter 5.2.9 – „Configuring permanent read“).

4.7 Switch off time

The Stick Reader is switched off automatically after a certain time, if no action has taken place (e.g. transponder read or menu access). The switch off time is configurable between 5 and 600 seconds with the configuration software (see chapter 5.2.6 – “Configuring the switch off time”).

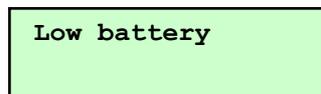
4.8 Battery management

If the battery is running low, a warning symbol (battery) appears after reading at the right side of the first display line.



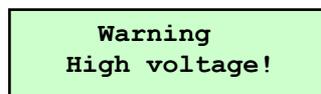
This symbol is indicating, that it is time to replace or recharge the battery soon.

If the Stick Reader detects a low battery directly after power on, the following information appears on the LCD display:



After displaying the information the Stick Reader is switched off automatically.

The Stick Reader offers internal trickle charging. A complete charging cycle takes min. 16 hours up to 20 hours (longer charging time is allowed). For rapid charging an external battery charger is available. For the normal operation and internal trickle charge only the 12V power supply has to be used, which comes with the AWR. If the voltage of the used power supply is too high, the following information appears on the LCD display directly after power on:



After displaying the information the reader is switched off automatically.

5. AWR100 Demo Software

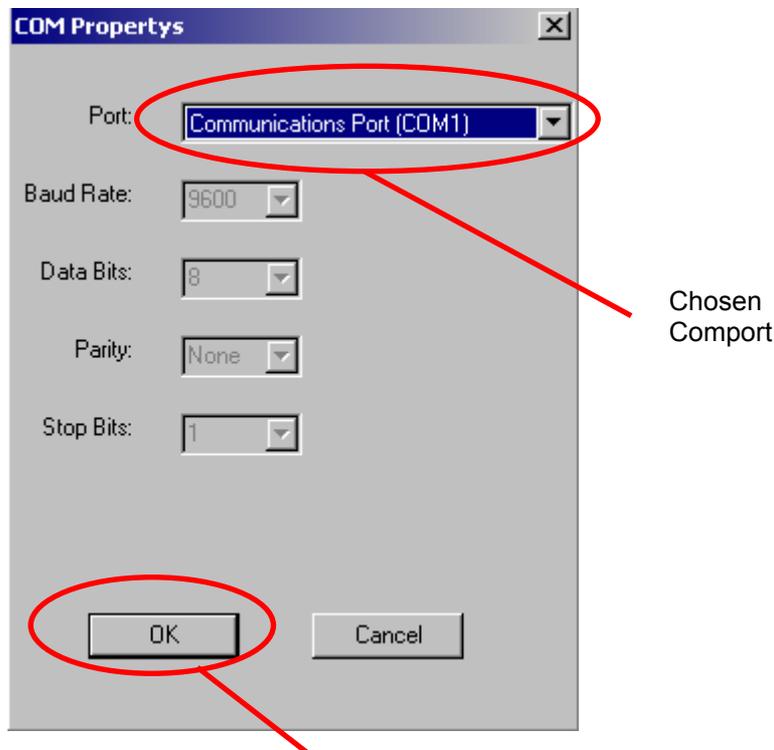
The AWR100 software is a configuration tool, which is delivered with every reader.

5.1 Comport settings

After the first start of the program a comport has to be set. Therefore choose "Comport" in the menu Settings:



The following dialog appears:



Select Comport and press OK.

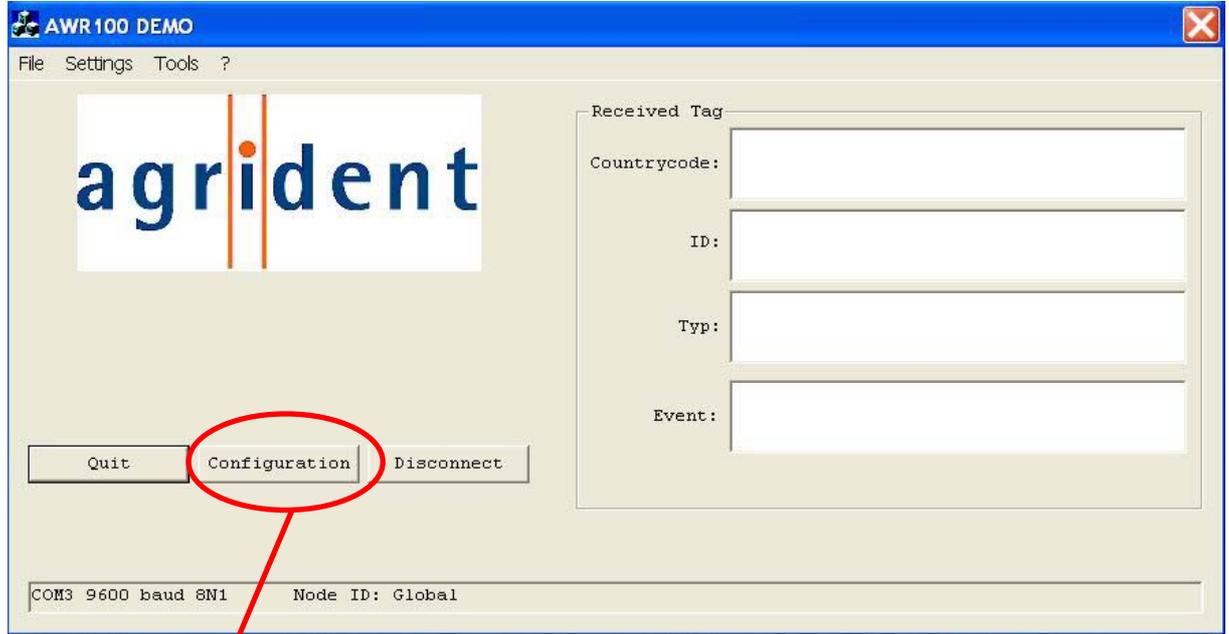
Switch on the AWR and wait until the message "Stick Reader connected" appears in the status line of the main window.



5.2 Configurations

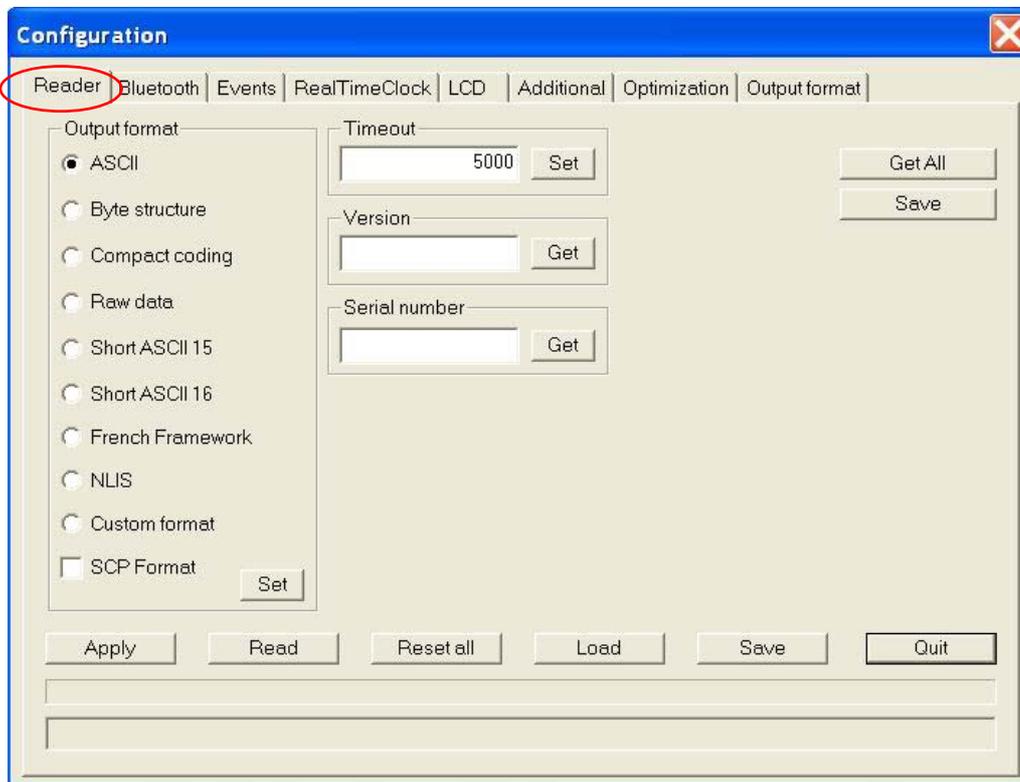
In order to change the reader settings, the configuration window has to be opened.

The following start screen appears after starting the Demosoftware:



Press Configuration:

The configuration window opens:

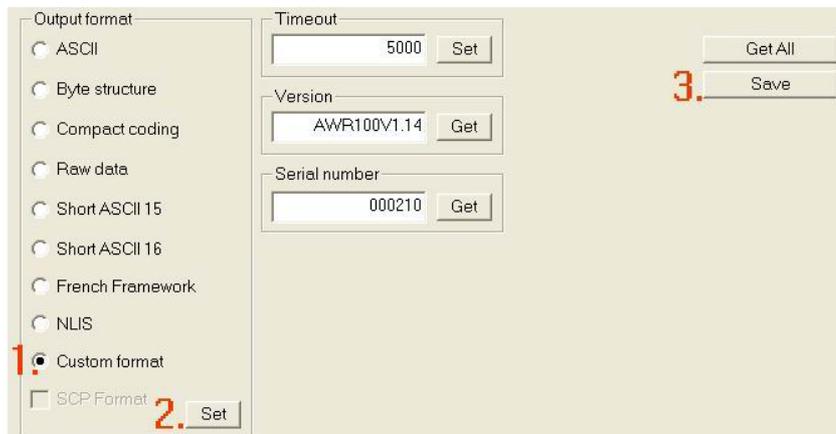


5.2.1 Output formats

The AWR100 offers a lot of different output formats. The standard output format works without transmission frame. If formats with transmission frame are used, the telegram has to be evaluated by software on the other side, which is a computer in most applications, in order to get the designated information, e.g. transponder number. The default format is “Short ASCII 15”.

The advantage of using the transmission frame is a fault-free operation because the frame also includes a CRC. The disadvantage is, that it needs a bit of knowledge about the protocol to get the information out of the telegram.

There are also formats available, which work without the transmission frame. These formats are recommended, if the reader has to work with a scale or where it is not possible, to deal with the standard protocol.



The screenshot shows a configuration window with the following elements:

- Output format:** A list of radio buttons: ASCII, Byte structure, Compact coding, Raw data, Short ASCII 15, Short ASCII 16, French Framework, NLIS, Custom format (selected), and SCP Format (unchecked).
- Timeout:** A text box containing '5000' and a 'Set' button.
- Version:** A text box containing 'AWR100V1.14' and a 'Get' button.
- Serial number:** A text box containing '000210' and a 'Get' button.
- Buttons:** 'Get All', 'Save', and 'Set' buttons are visible on the right side.
- Annotations:** A red '1.' points to the 'Custom format' radio button, a red '2.' points to the 'SCP Format' checkbox, and a red '3.' points to the 'Save' button.

Changing the output format

In order to change the output format, select a format first. Pressing the “Set” pushbutton, the setting is send to the reader, if the reader is connected. In order to keep the changes permanent, the “Save” pushbutton has to be pressed. The current setting can be read out pressing the “Get All” pushbutton.

The following output formats work with the transmission frame:

- ASCII
- Byte structure
- Compact coding
- Raw data

If “SCP Format” is marked additionally, the control signs are left out, and the informations are transmitted without the frame. The option SCP Format is only available for ASCII.

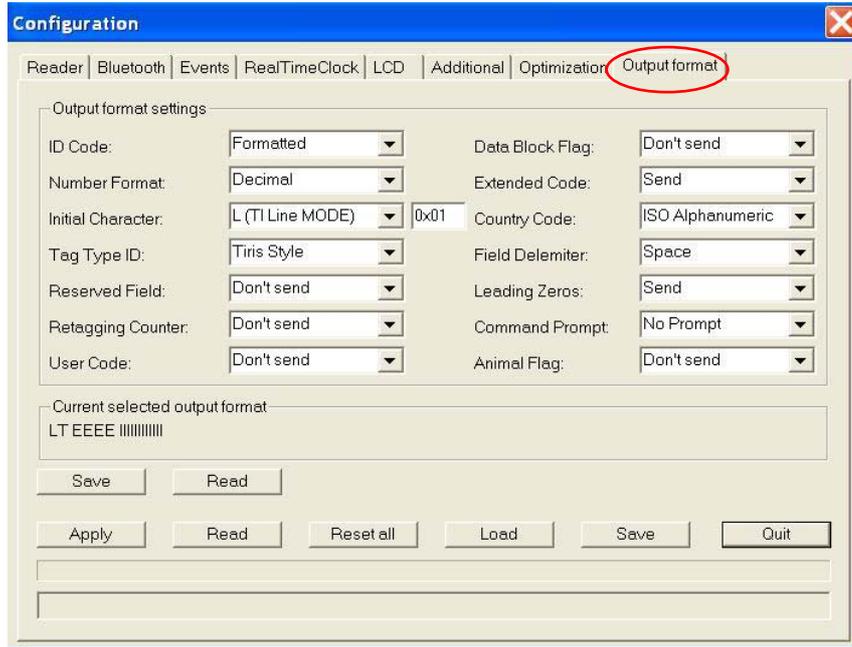
The following formats don't work with control characters:

- Short ASCII 15
- Short ASCII 16
- French Framework
- NLIS
- Custom format

For these formats “SCP-Format” is not available.

Short ASCII 15 sends the 15 digit ID without the leading zero in the country code. Short ASCII 16 includes the leading zero in the country code. The NLIS format is the same like Short ASCII 15 but with a space between country code and ID. The French Framework format contains additional information, like animal flag, retagging counter, time stamp and so on.

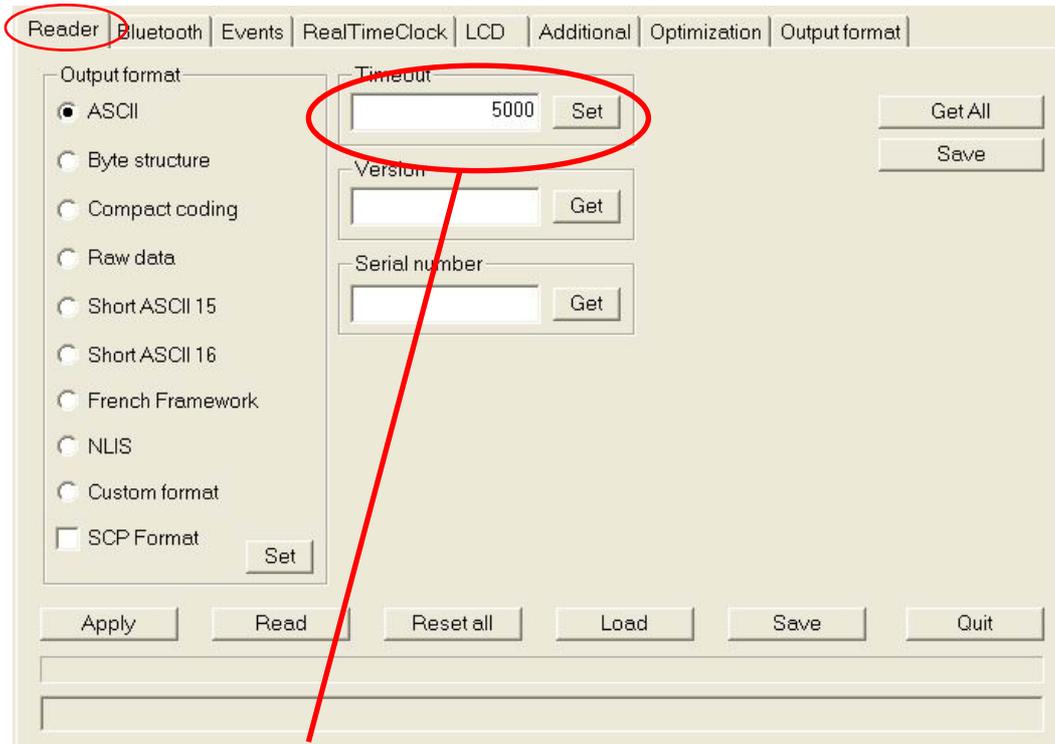
The custom format is like a construction kit, the user can adapt the output string to his needs.



For further details about the output formats, see the “AWR100_output formats” document on the provided CD.

5.2.2 Configuring the reading time

The number of read cycles is configurable. Therefor choose the index Reader:



Set Timeout in ms (only 100ms Steps possible), press “Set”.
 In order to store new timeout value permanently, press “Save”.
 In this example a timeout value of 5000ms is set.

5.2.3 Bluetooth

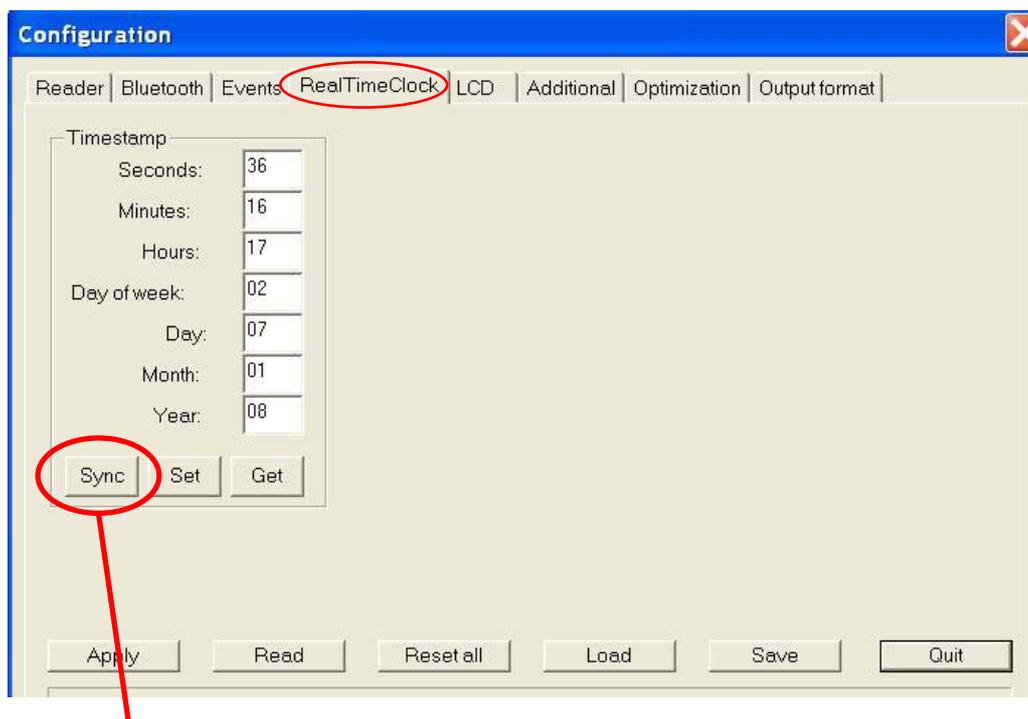
The index “Bluetooth” allows to change the Bluetooth settings of the reader. It is possible to input the address of another Bluetooth device here and send it to the AWR100. In this case the AWR100 is the Bluetooth master and will control the connection.

It is also possible, to set the AWR100 to Bluetooth slave, which makes no sense for the most applications.

For further details about Bluetooth, see the “AWR100_Bluetooth_manual” on the CD.

5.2.4 Synchronising the real time clock

Chose the index RealTimeClock:



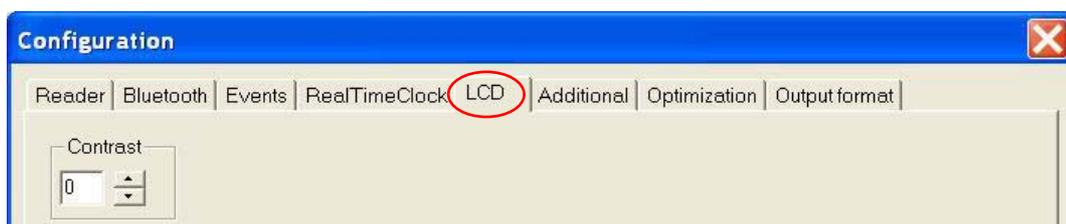
If the pushbutton “Sync” is pressed, the current time of the connected computer will be sent to the AWR.

You can also enter the time and the date manually. In order to send it to the reader press “Set”.

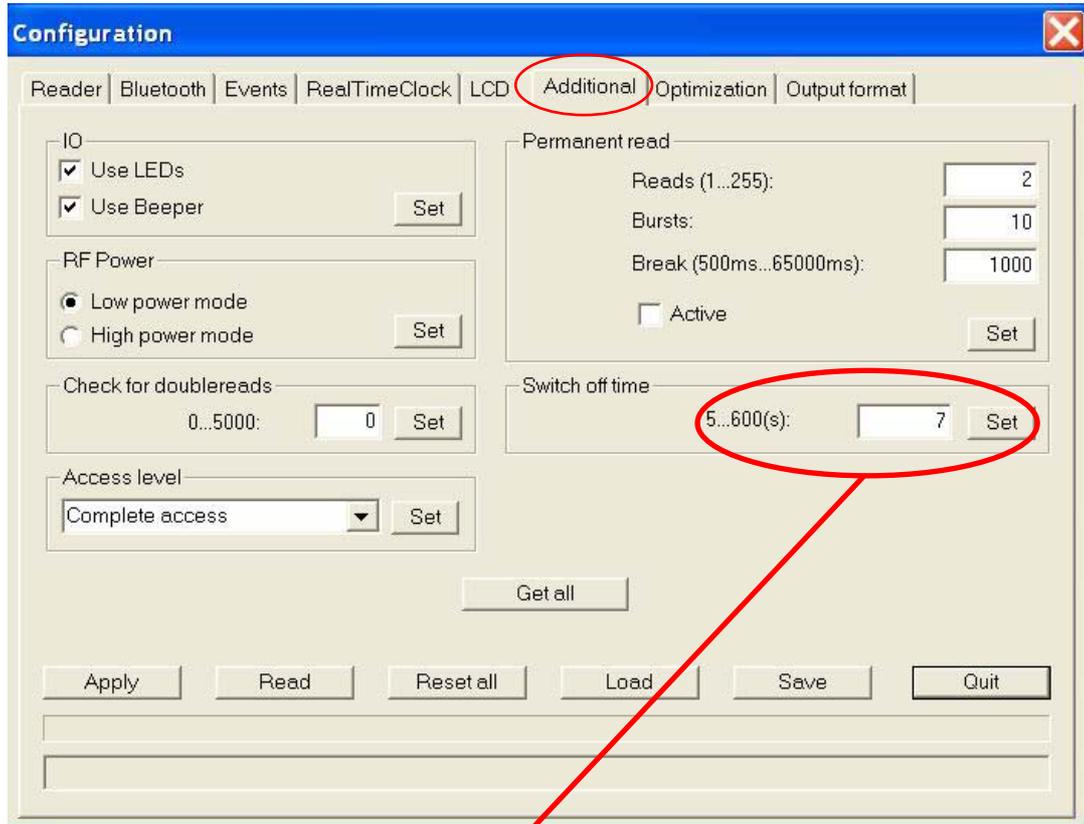
The current time setting can be requested by pressing “Get”.

5.2.5 LCD

The contrast of the display can be changed in the index “LCD”. Values from 0 to 7 are possible.



5.2.6 Configuring the switch off time

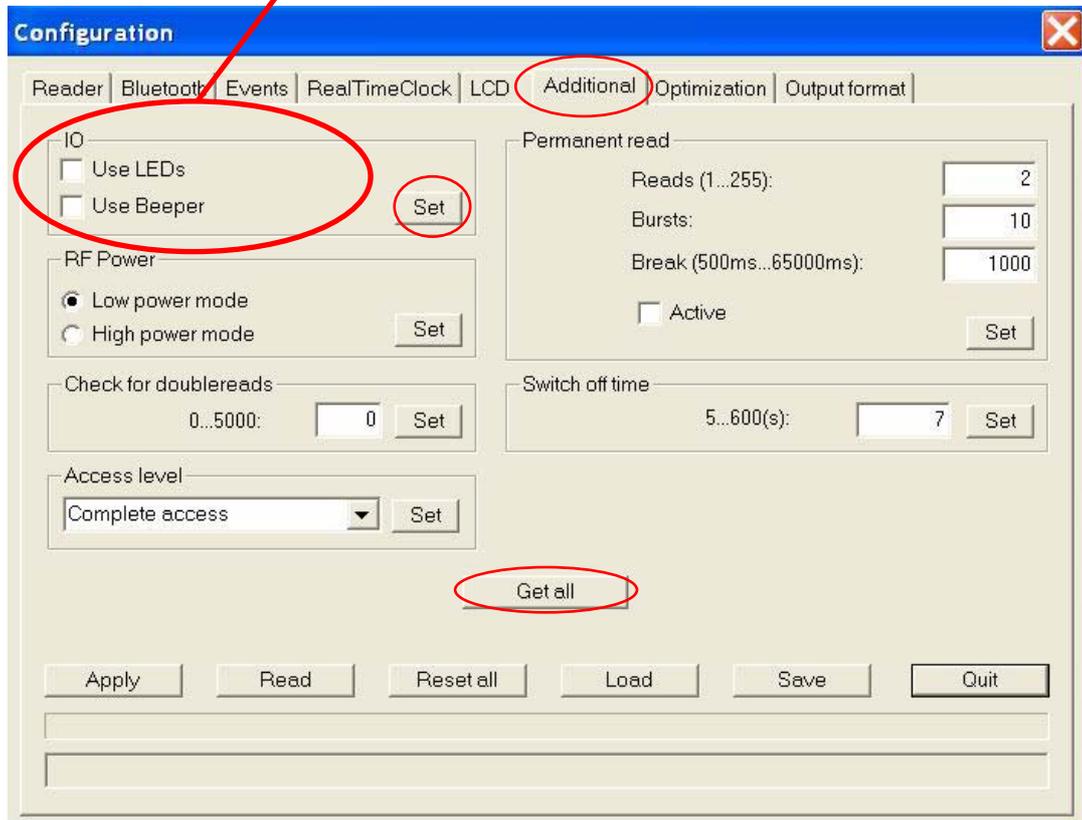


The Reader is switched off automatically if no action has taken place (e.g. transponder read or menu access). The switch off time is configurable between 5 and 600 seconds. Type in the number of seconds in the corresponding field and press “Set”.

The current setting can be requested by pressing the “Get all” button. In this example the switch off time is set to 7 seconds. The default value is 10 seconds.

5.2.7 Configuring IO

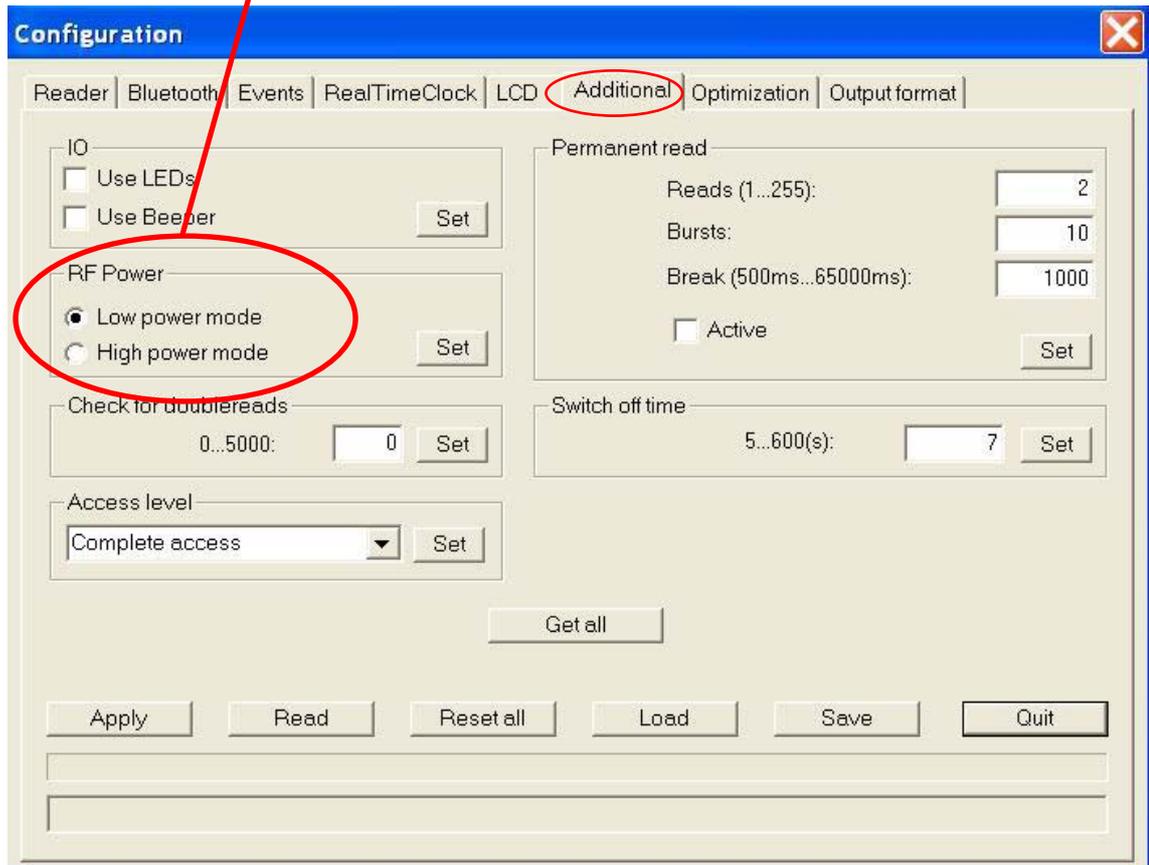
During the RF field is on, the red LED at the top of the reader is flashing. After a successful read the green LED in front of the Stick Reader is flashing and the buzzer is beeping. Both can be enabled or disabled by marking or unmarking the corresponding checkboxes. Press “Set” in order to apply the settings. The current IO setting can be readout by pressing the “Get all” pushbutton. In this example the beeper and the LED’s are disabled.



5.2.8 Configuring RF Power

Two different RF Power modes are available, Low power mode and High power mode. The High power mode offers higher reading ranges but the operating time of the battery is shorter. The Low power mode provides a longer operating time but the reading range is a little bit smaller.

In order to choose the power mode, mark one of the radio buttons and press the corresponding "Set" pushbutton.



5.2.9 Configuring Permanent read

If lots of transponders have to be read in a short time, the permanent read mode is a useful tool. In this mode, the AWR100 will read transponders until the timeout is reached or the read button is pressed. After a successful read of a transponder, the timeout will be reset. To prevent parts of the Stick Reader from overheating, the break time must be 450 times greater than the number of reads.

“Reads” is the number of reads in one burst. The number of “bursts” is the timeout before permanent reading stops. “Break” is the time in ms between two bursts.

In this example two reads are in one burst. That means a minimum break time of 900 ms is necessary (in this example 1000 ms is chosen).

The number of bursts is 10.

Timeout is calculated as following:

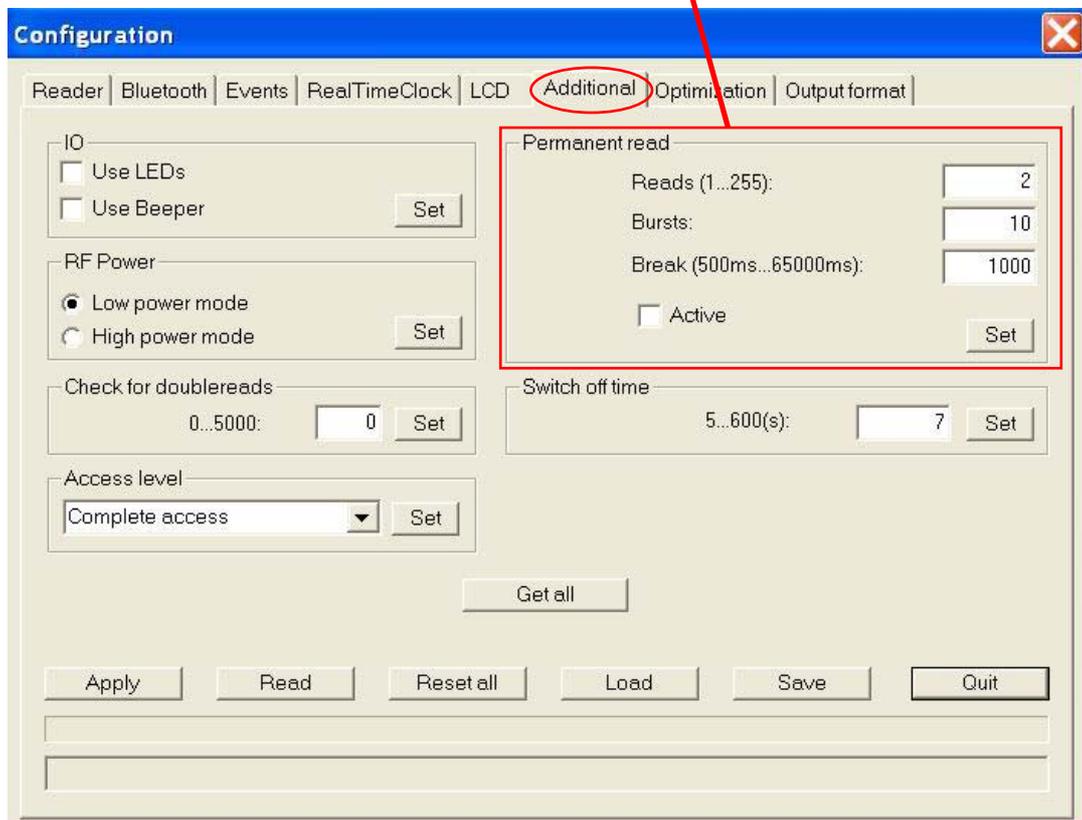
$$\text{Timeout} = (\text{number of reads} * \text{reading time} + \text{break time}) * \text{number of bursts}$$

One read takes approximately 90ms.

$$\text{Timeout} = (2 * 90\text{ms} + 1000\text{ms}) * 10 = 11800 \text{ ms}$$

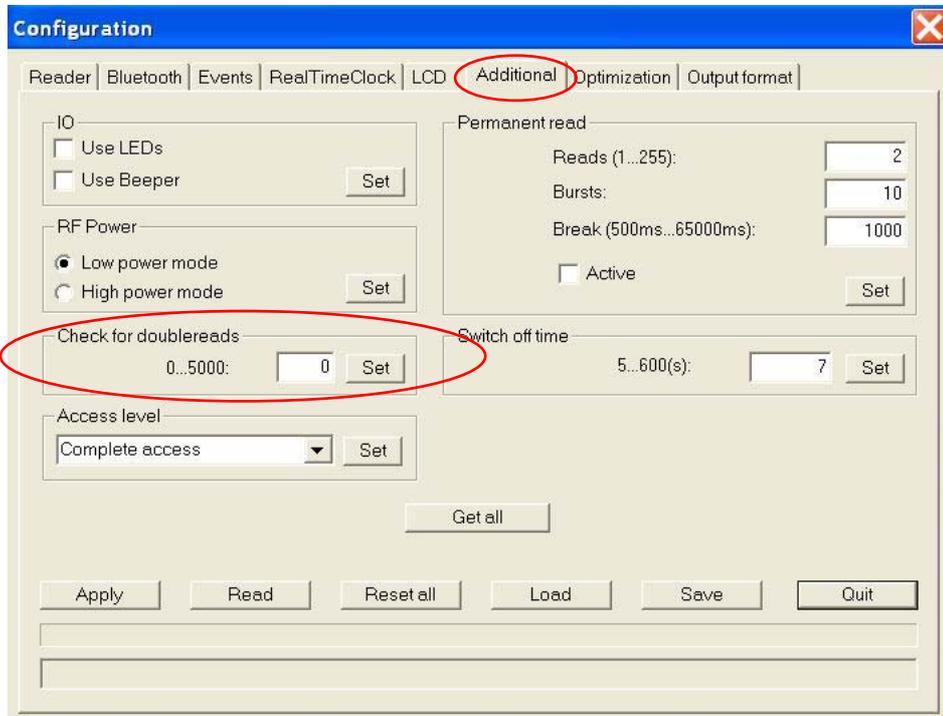
In this case timeout is approximately 12 seconds.

In order to configure and enable permanent read mode fill in the values into the corresponding input fields, mark the checkbox “Active” and press the corresponding “Set” pushbutton.



5.2.10 Check for doublereads

The AWR can check its database for doublereads. Transponders, which were already read within the the selected range, are not stored in the database again and not send to the interface. The range can be set from 0 up to 5000, where 5000 is the maximum number of datasets. If a value of 0 is selected, the reader won't scan for doublereads. 0 is the default setting.



Type in the designated value and press the corresponding „Set“ pushbutton in order to send this setting to the reader.

 Because of the serial readout of the data from the memory, it can take a few seconds to scan for doublereads if the memory is almost full and a high value is chosen.

During the AWR is scanning for doublereads the following message appears on the display:

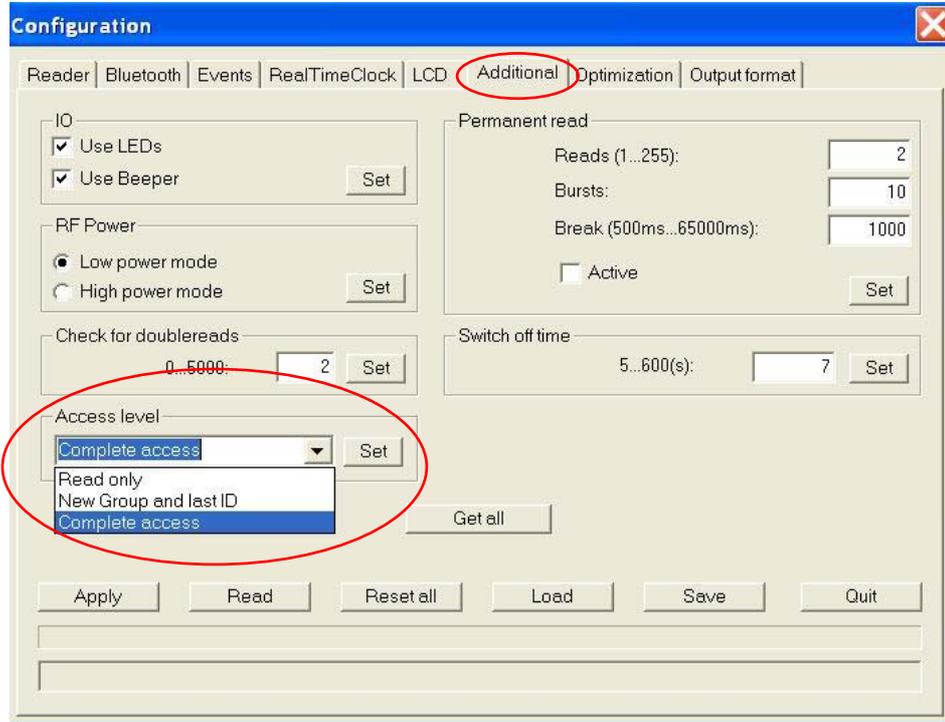
**Scan for
Double reads**

If the reader detected a double read, the reader will display the transponder number in the first line of the LCD and the string “Double read” in the second line.

**984 010900316360
Double read**

5.2.11 Configuring the Access level

The menu of the AWR can be set to three different access levels. This makes sense, if the user shouldn't be allowed to change particular settings. The access level can only be changed with the PC software, not at the reader.



Choose the index „Additional“ in the configuration window. Set the designated access level and confirm with pressing the “Set” pushbutton.

Read only	The menu is inaccessible, only reading transponders is possible.
New Group and last ID	Only the menu points “New group” and “Last ID” can be used.
Complete access	The user has complete access to the menu.

The default setting is “Complete access”.

5.2.12 Applying all settings in one step

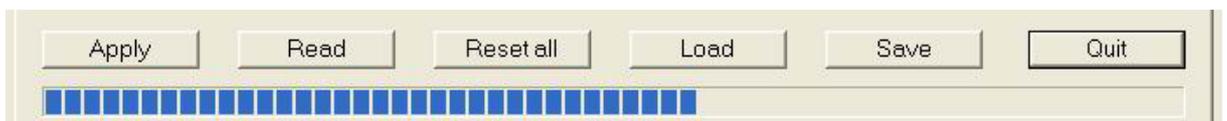
In every index of the configuration window the following pushbuttons are available:



If you press “Apply” the configuration of every index is sent to the reader in one step. “Read” is requesting the complete configuration, the reader is currently using. Exceptions are the Peer adress of the Bluetooth module, the real time clock and the LCD contrast.

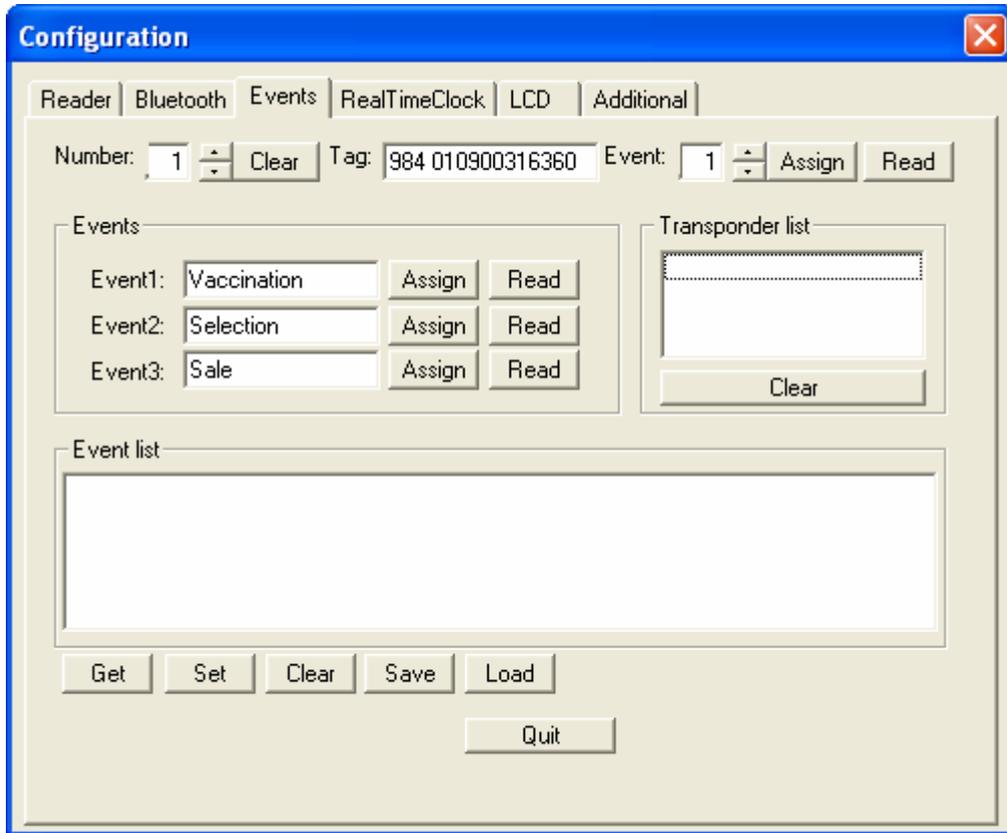
The “Reset all” pushbutton is setting the AWR back to factory configuration.

It is also possible, to save a complete configuration. So you can create a setup for your needs once and save it. If you want to transfer these settings to other readers, just load the configuration file pressing the “Load” button and then “Apply”. The progress bar indicates the transmission of the settings.



5.3 Events

In a second database up to 30 transponders can be assigned to one of three possible events. The text of an event can be set to any value, but the length of the text must not exceed 13 characters.



By pressing the pushbutton “Get” a list of all assigned transponders is generated. In order to assign a transponder to an event, a free entry must be chosen in the field “Number” (1...30). The complete transponder ID inclusive country code must be entered into the field “Tag”. In the field “Event” one of the possible events has to be chosen. If all parameters were set, the input will be confirmed by pressing the pushbutton “Assign”. The text of the events can be read by pressing the corresponding pushbutton “Read” and can be assigned by pressing the corresponding pushbutton “Assign”. By pressing the pushbutton “Clear”, all assigned events will be cleared.

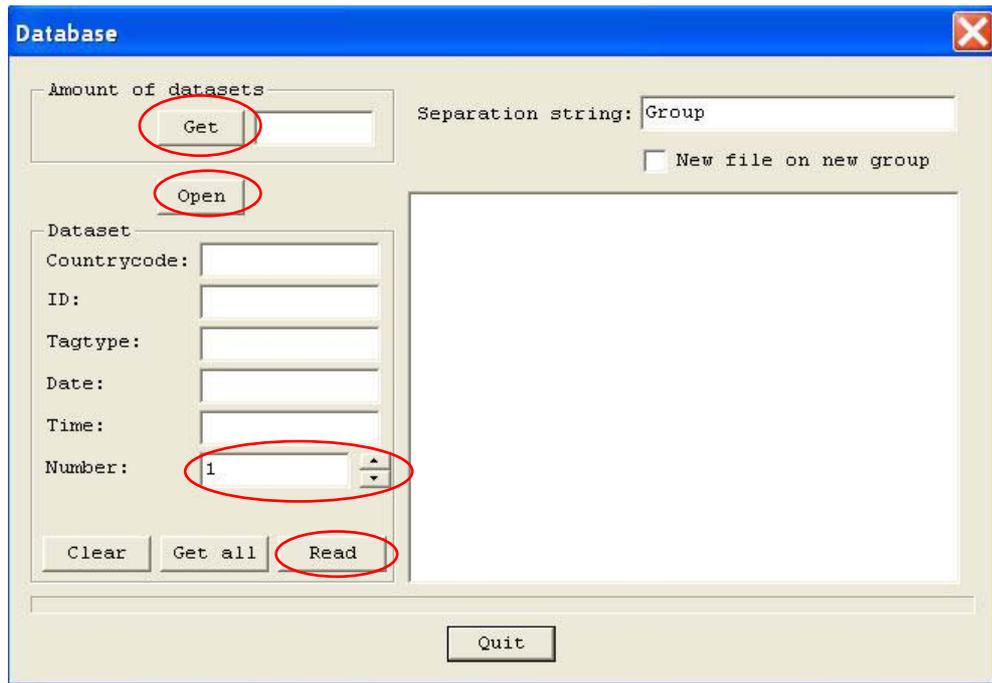
6. Database

The AWR100 has a memory, in which up to 5000 transponder datasets can be stored.

In order to work with the database chose “Database” in the menu point “Tools”.



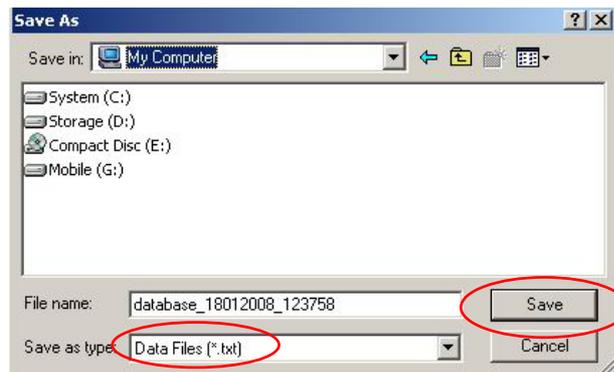
The following dialog appears:



The amount of the currently stored entries can be requested by pressing the pushbutton “Get”. A particular dataset can be read out by setting the number of the dataset in the field “Number” and pressing the pushbutton “Read”. A stored database file can be opened by pressing the pushbutton “Open”.

6.1 Reading the database

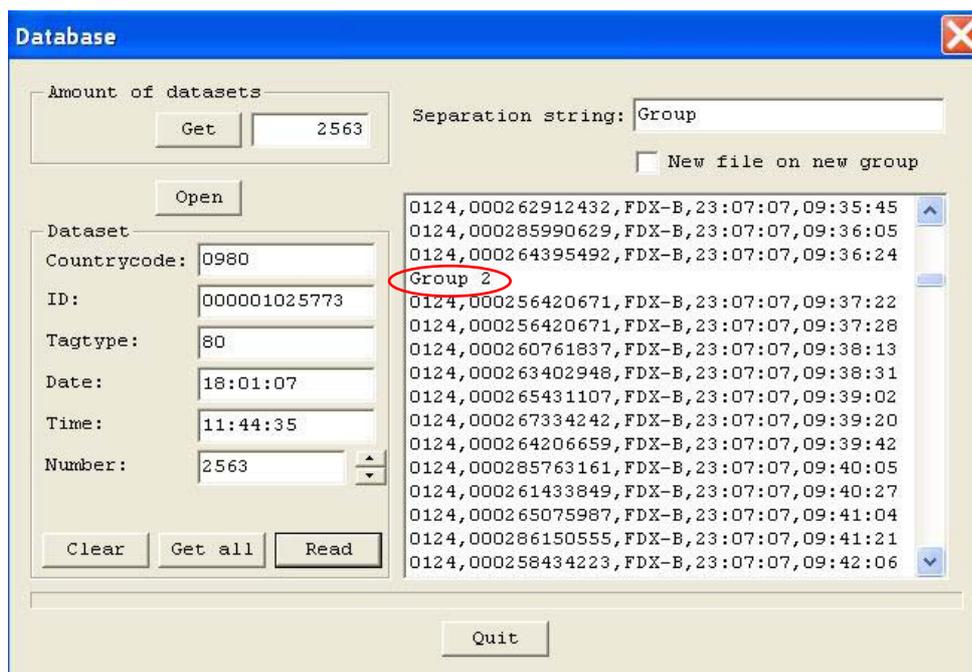
If pushbutton “Get all” is pressed, all stored datasets will be downloaded and displayed in the list box. Before the datasets are transferred, a dialog opens, which is asking for a location and a file name, where all datasets should be stored on the computer.



The file type is “txt”, the default file name consists of the string “database” and the current date and time. The file name can also be changed.

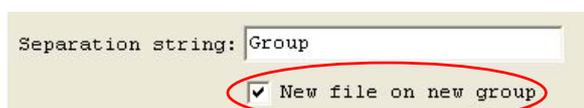
If pushbutton “Cancel” is pressed, the datasets are only displayed in the list box but not stored on the PC.

In this example the database consists of 2563 datasets:



The first separator (Group 1) is automatically set by the PC. All other separators are part of the database of the reader. A group separator is stored in the database as a transponder with only zeros. By pressing the pushbutton “Open”, the stored datasets can be watched in the list box.

The string “Group” can be replaced with any other string. If the checkbox “New file on new group” is activated, the demosoftware will automatically create a new protocol file as soon as a group separator is being downloaded.

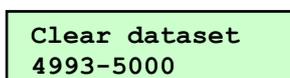


6.2 Clearing the database

By pressing the pushbutton “Clear”, the complete content of the database will be erased if the following dialog is answered with Yes.



The clearing procedure is also displayed on the AWR100 display.



7. Events

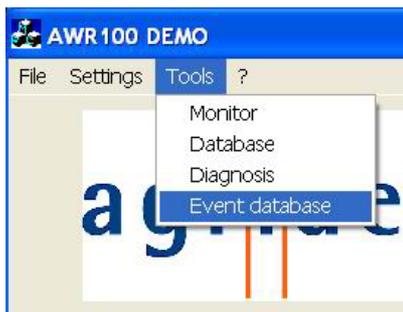
It is possible to display special transponder specific events on the LCD display. If a transponder was read and transmitted to the HOST (e.g. PC or PDA), the HOST has to search in its internal database for the currently received transponder. If one of the entries matches with the received transponder, the assigned event string (16 ASCII characters) has to be transmitted to the AWR together with the transponder ID. The AWR100 compares the received transponder ID from the HOST with the last read transponder. If both IDs are equal, the AWR100 displays the transmitted event string in the first line of the display. The transponder ID is transmitted to the reader in hexadecimal notation.

7.1 Displaying events using the AWR demo software

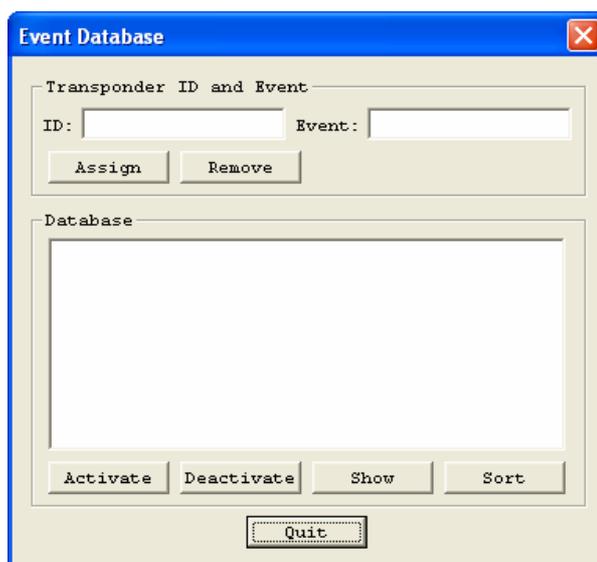
The AWR demo software has an event database which can be used for demonstrating and testing this feature. In that database transponder IDs and assigned events are stored. The database file is named "EventDatabase.txt" and is located in the same directory as the demo software. The file is automatically created, if it not already exists, after the first start of the event database dialog. This file can be edited using an editor like WordPad. It is also possible to use the event database functions of the demo software to administrate this file.

7.1.1 Working with the event database

Choose Event database in the menu Tools.



The following dialog appears:

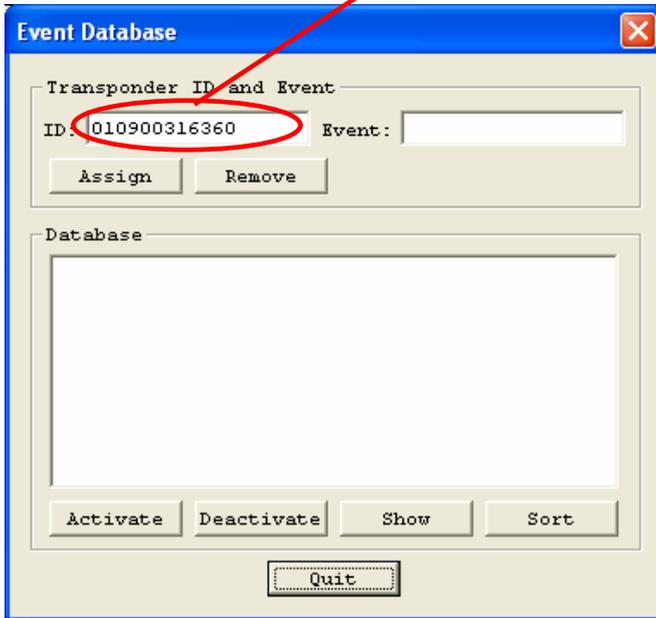


The entries of the event database are displayed in the list box. In this case the list box is empty, because there are no entries in the event database at the moment. After creating the event database file, the file contains only the header:

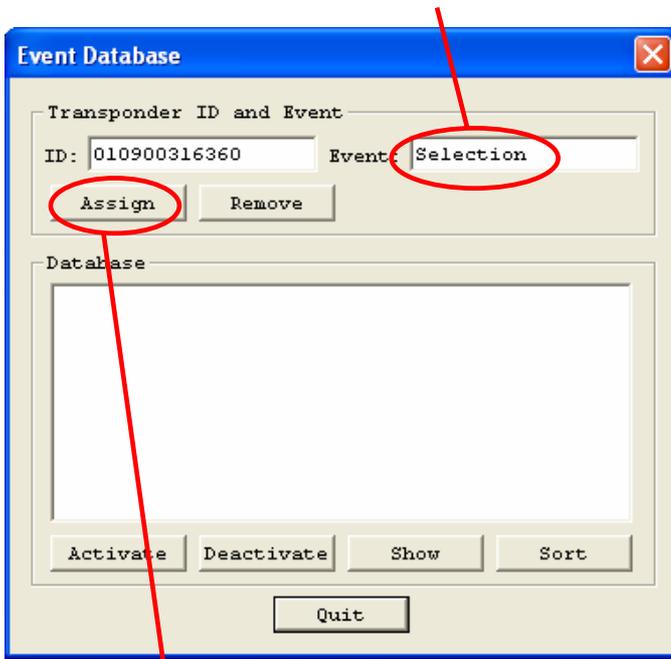
[Transponder ID] [Event string (max. 16 characters)]

7.1.2 Assigning an event

If the transponder ID is known, it can be entered into the input box "ID" in BCD notation. Alternatively the transponder ID can be read with the AWR. The reader has to be connected to the comport. The transponder ID is displayed automatically in the input field:

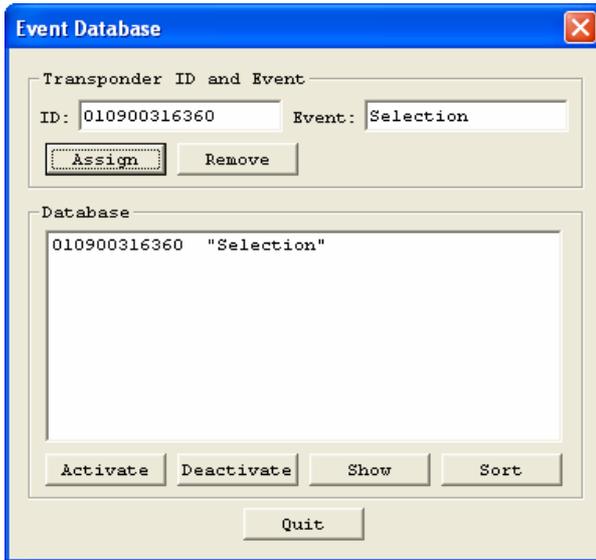


Enter the event text into the edit field "Event" (up to 16 characters are allowed). In this example "Selection" is used as event text.



Press "Assign" in order to allocate transponder ID and event text.

After pressing the “Assign” button, the updated content of the event database appears in the list box:

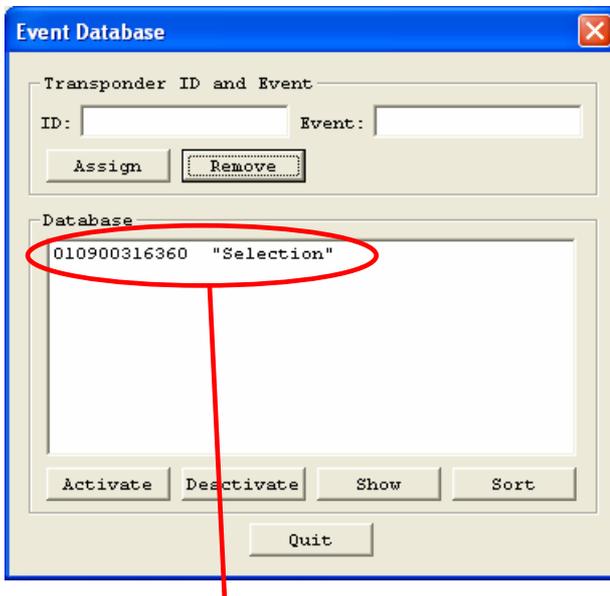


The database file has changed:

[Transponder ID] [Event string (max. 16 characters)]
010900316360 "Selection"

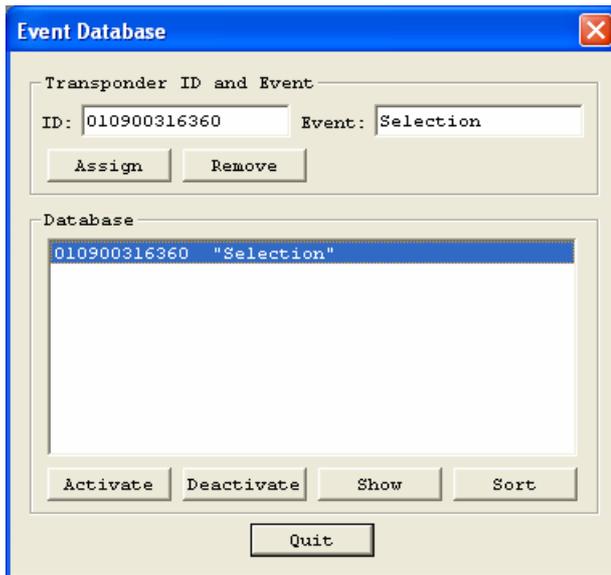
7.1.3 Replacing the event text

Open the Event Database dialog. In this example the event database includes only one entry:

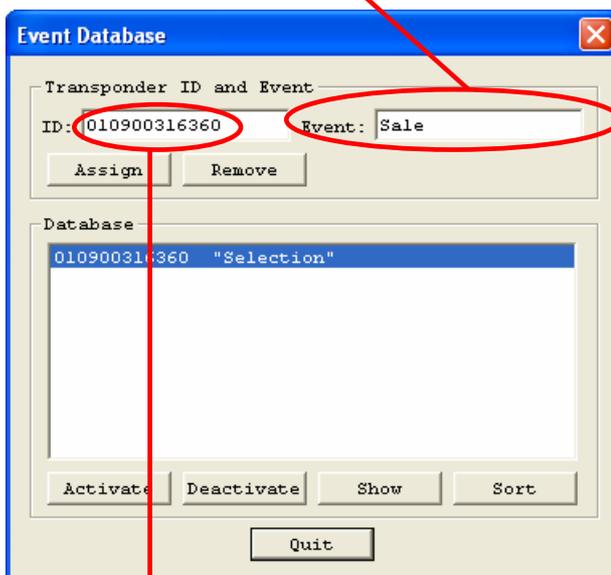


Click on the element, whose event text should be replaced.

The transponder ID and the assigned event text appear in the corresponding input boxes:

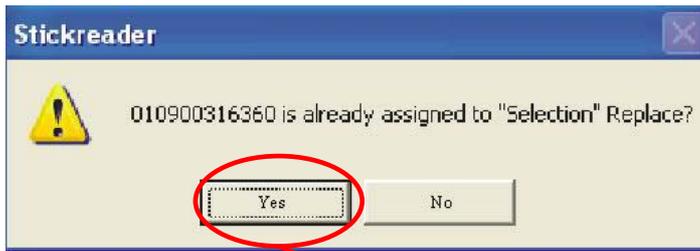


Now change the text in the edit field Event.

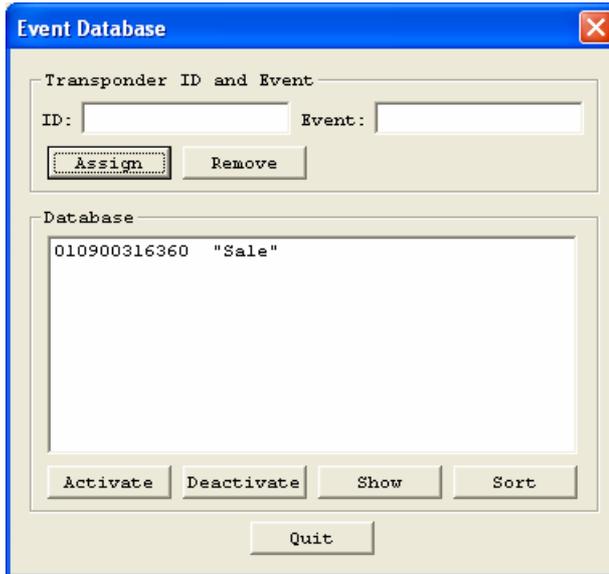


Press Assign to replace the event text.

The following dialog appears:



Press Yes in order to replace the event text.



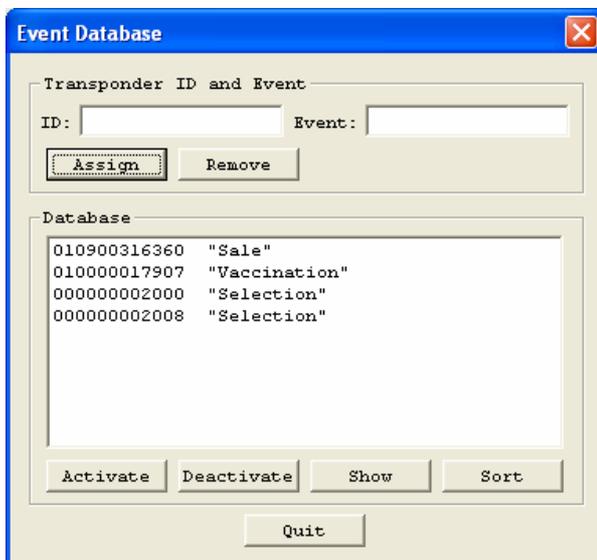
The list box shows the current content of the database with the replaced event text.

The content of the event database file has changed:

```
[Transponder ID] [Event string (max. 16 characters)]
010900316360    "Sale"
```

7.1.4 Removing event database entries

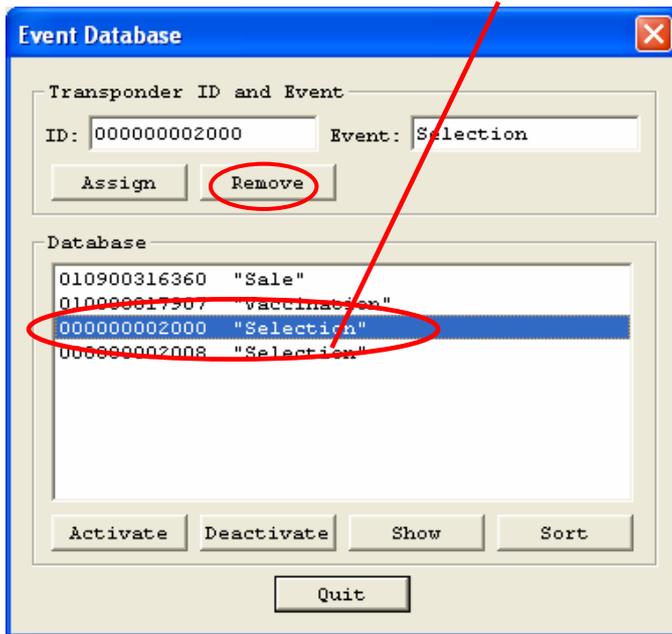
Open the Event Database dialog. In this example the event database consists of four entries:



Content of the database file:

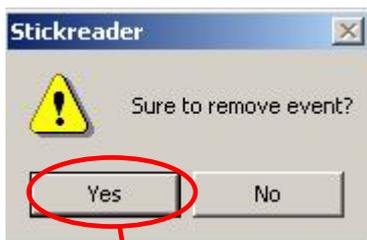
```
[Transponder ID] [Event string (max. 16 characters)]
010900316360 "Sale"
010000017907 "Vaccination"
000000002000 "Selection"
000000002008 "Selection"
```

Select the entry to be removed by clicking on the event in the list box. The transponder ID and the assigned event text appear in the corresponding input fields:

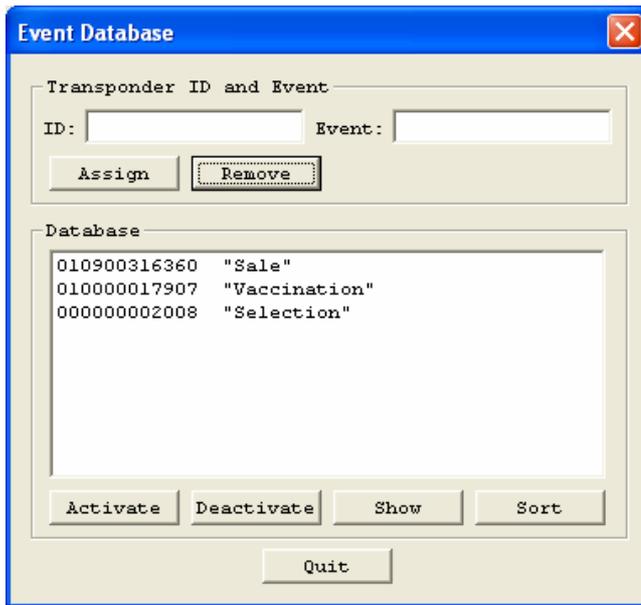


Press Remove to delete the selected event from the event database.

The following dialog appears:



Press "Yes" to remove.

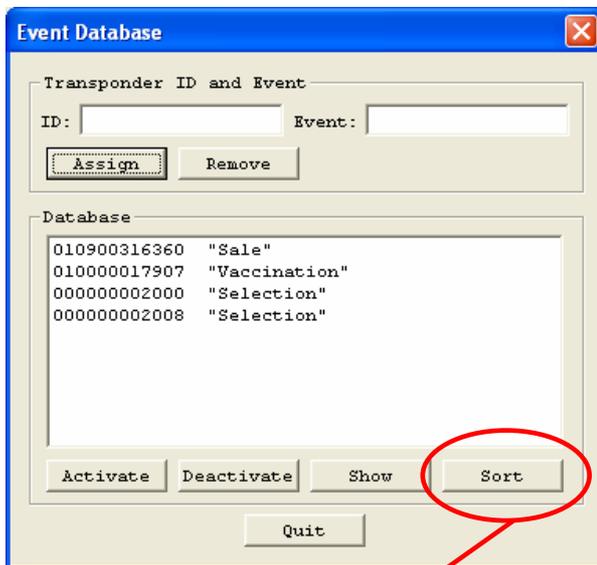


Content of database file after removing third entry:

```
[Transponder ID] [Event string (max. 16 characters)]
010900316360    "Sale"
010000017907    "Vaccination"
000000002008    "Selection"
```

7.1.5 Sorting the event database list

Open the “Event Database” dialog. In this example the event database consists of four entries:

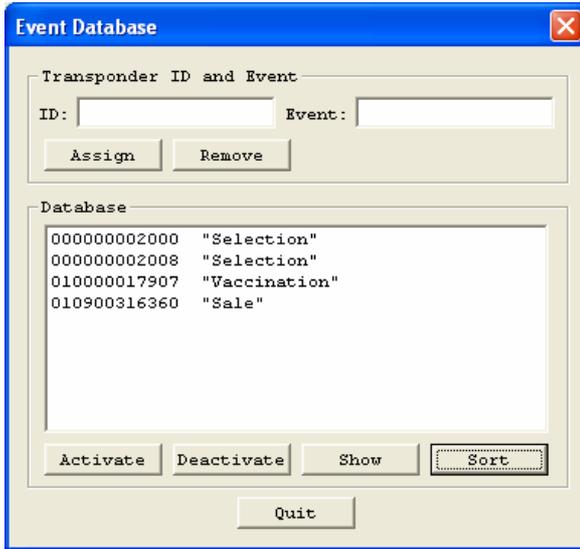


Press Sort in order to arrange the entries of the event database list. After sorting, the event with the lowest transponder ID appears at the top of the list.

The content of database file before sorting:

```
[Transponder ID] [Event string (max. 16 characters)]
010900316360    "Sale"
010000017907    "Vaccination"
000000002000    "Selection"
000000002008    "Selection"
```

After pressing the “Sort” button, the entries of the event database appears in a sorted order starting with the lowest transponder ID:

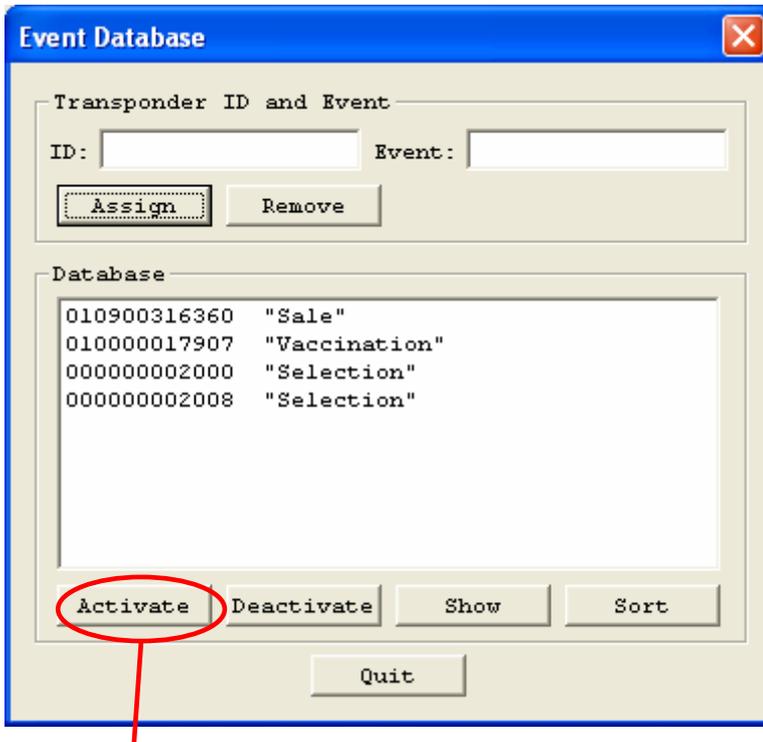


Content of the database file after sorting:

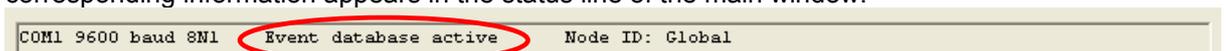
```
[Transponder ID] [Event string (max. 16 characters)]
000000002000    "Selection"
000000002008    "Selection"
010000017907    "Vaccination"
010900316360    "Sale"
```

7.2 Activating the event database

Open the “Event Database” dialog.



Press “Activate” in order to show assigned events on the display of the AWR. If activated, the corresponding information appears in the status line of the main window:



After receiving transponder data, the AWR100 demo software will search for the received transponder ID in the event database. If the received transponder ID is found, the AWR100 demo software will send the transponder ID and the assigned event text to the AWR100.

In the first line of the LCD display, the transponder number is displayed in decimal format. In the second line of the LCD display, time and transponder type are displayed.



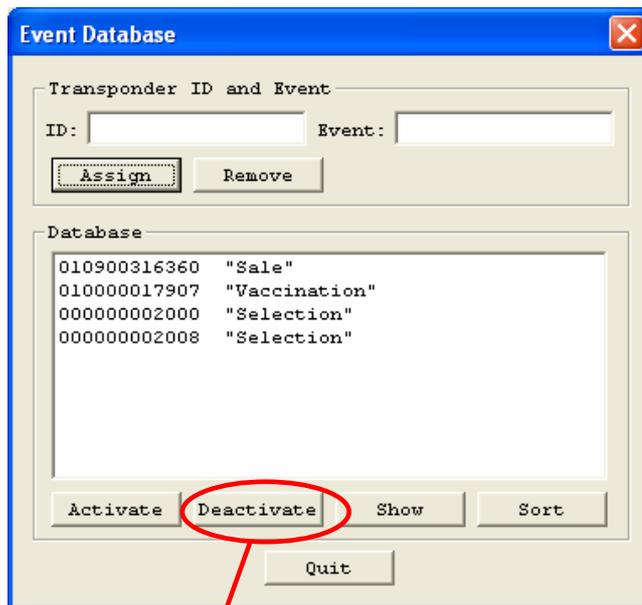
After pressing the read button or after the timeout (appr. 3 seconds) has elapsed, the event text is displayed on the first line of the LCD display:



The information is displayed for approximately 20 seconds if the read button is not pressed again.

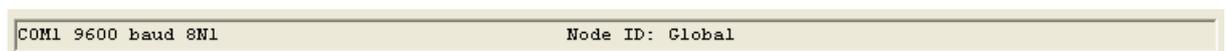
7.3 Deactivating the event database

Open the Event Database dialog.



Press "Deactivate" in order to disable the transmission of events.

There is no information displayed about event database on the status line, which indicates that it is switched off:



8. Safety and care

The manufacturer accepts no liability for damage resulting from improper use or use not consistent with that described in these operating instructions.

- The AWR100 Reader contains no parts that can be repaired by the user. For this reason the Reader Electronic may only be repaired by authorised customer service personnel.
- In both operation and storage of the reader please secure to comply with the environment conditions specified in the technical data.
- Clean the AWR100 Reader only with a damp cloth. Use only water and any commercially available cleaning agent.
- If the reader is not used for a longer time, the battery should be taken out of the AWR100. The battery should be stored dry and cool separately.

Any modification to the AWR100 Reader will render the warranty null and void.

9. Warranty

The manufacturer of the AWR100 Reader will provide a warranty of

12 months

from the day the device is shipped and subject to the following conditions:

- a. Without submission of proof of purchase no warranty can be given.
- b. In the event that defects are detected the manufacturer is entitled to choose between up to two attempts at repair or supplying a replacement device on one occasion. The warranty period for the repaired item or for a replacement item is 3 months but will always extend to the end of the original warranty period. No further claims can be entertained, especially claims for compensation for consequential losses. This exclusion of liability does not apply to claims made on the basis of the Product Liability Act.
- c. Warranty claims cannot be entertained unless the Agrident system was installed properly and used properly and for the purpose intended.

No warranty obligations exist in particular when:

1. Damage is attributable to improper use of the device, to a incorrect connection or incorrect operator action;
2. The device was not cared for and maintained in accordance with the manufacturer's recommendations and this is the cause of the damage;
3. The damage is due to any modification to the device;
4. The damage is due to force majeure, for example, lightning strike;
5. The damage is due to wear resulting from overstressing mechanical parts.

10. FCC digital device limitations

Radio and Television Interference

This equipment has been tested and found to comply with the limits for a digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and television reception.

Caution! Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

11. CE MARKING

Hereby, Agrident BV declares that this equipment, if used according to the instructions, is in compliance with the essential requirements and other relevant provisions of the RTTE Directive 1999/5/EC. For use in all countries of the EU.

To obtain a copy, contact Agrident BV and request the "Declaration of Conformity" document for readers.

Agrident BV
mail@agrident.com

In case of alteration of the product, not agreed to by us, this declaration will lose its validity.

This symbol indicates proof of conformity to applicable European Economic Community Council directives and harmonized standards published in the official journal of the European Communities.



11. Trouble shooting

For any problem please contact us:

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FAX +49 5105 582573-17
e-mail info@agrident.com