

"RD reader" is a download software tool designed to transfer data from Elmes RD448 receiver (RD) to hard disk database in personal computer (PC).

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### 1. What is Elmes RD448 receiver ?

Elmes RD448 receiver is used in access control and remote control systems. It features large transmitter memory for up to 448 Elmes Elektronik made key-fob transmitters and last 6144 events memory log. Every time a valid command from key-fob transmitter is received, it's user number (0...447) is registered in the memory log along with information on used transmitter's button (0..1) and current time. The content of the receiver's event memory log may be downloaded to PC.

### 2. How to connect RD receiver to PC ?

Connection of the receiver and the PC is made through a mini USB cable.

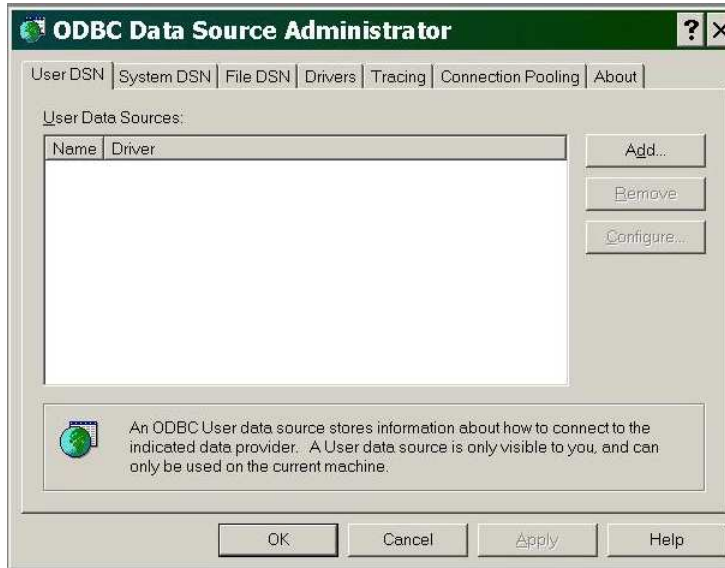
### 3. What software can be used to communicate RD receiver with PC?

Communication between RD receiver and PC is supported by dedicated Elmes Electronic made software "RD reader". The software transfers event memory data to PC in Microsoft Access database format (\*.mdb) and is freely available for download from RD receiver manufacturer web site: [www.elmes.pl](http://www.elmes.pl).

#### 4. How to install "RD reader" application (Microsoft Windows XP)?

The default installation folder for RD reader is: „C:\Program Files\RD reader“. After installation of the RD reader creates a new data source ODBC named “RD reader”. To do so follow the steps below:

- Open the „Control Panel“ and activate „Administration tool“-> "data source" ODBC;
- Open „Systems DNS“ (or „User DSN “ as shown below), and click „Add...“;



#### IMPORTANT! Attention Microsoft Windows 7 (64 bit) users:

"ODBC Data Source Administrator" file must not be accessed directly from Control Panel as it starts 64 bit version of the file (odbcad64.exe) not allowing MsAccess driver selection which is needed to correctly use the RD reader software.

Instead, we must launch the 32 bit version of the "ODBC Data Source Administrator". To do so copy and run below path in Win7 (Start-> All programs-> Accessories-> Run):

c:\Windows\SysWOW64\odbcad32.exe

NOTE: Win7 menus view will slightly differ from those of WinXP.

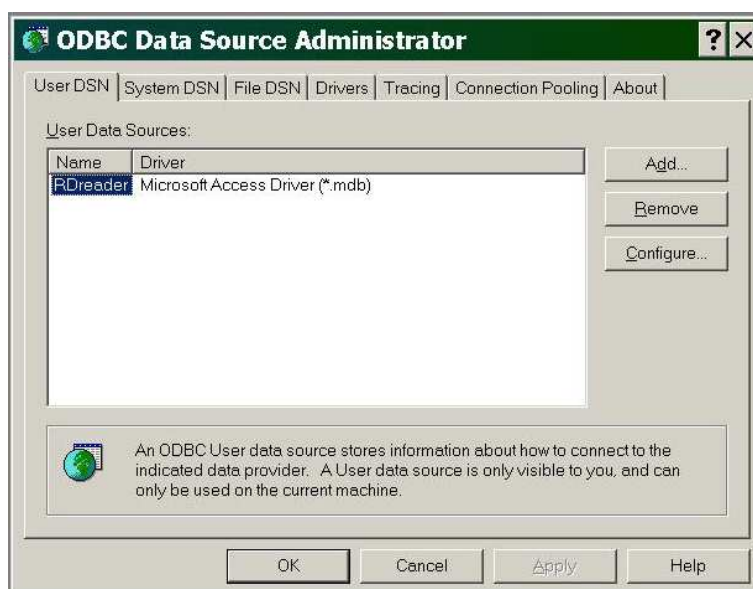
- Select from the list „Microsoft Access Driver (\*.mdb)“;



- d) Type "RDreader" in the Name of database source (without quotes "") and click OK:



- e) Now, a new item will be added to the system database list:



- f) Finish the procedure clicking OK.  
g) Now you can start the application by executing the file: c:\Program Files\RD reader\Rd6.exe.

## 5. How to use "RD reader" software?

First step to do after launching "RD reader" software is to select communication port COM from menu Tools->Options. If number of COM port is incorrect then communication will not be active. The COM port number should be changed.

Next step is to choose from menu File->Open Database a database to which receiver's event memory data will be downloaded. When needed, a new database can be created with the help of menu File->New Database. By doing so, the standard data base "template.mdb" is copied to a new data base named by the user. To execute the command, the new designed data base folder must contain file "template.mdb". It should be copied from the folder where "RD reader" is installed.

Now, selecting sub-menu Tools->Read events or an appropriate icon on the computer toolbar receiver's data can be downloaded to PC database. This process may take over a minute after which a message appears informing of the amount of data downloaded. In the application's main window the data can be reviewed.

## **6. Is RD receiver event memory cleared after transferring data to PC?**

The RD receiver memory is not cleared after data download to PC. However, any attempt to download the same data again does not double data as "RD reader" software management allows only new data for download. Setting on a new database file will allow downloading all data from RD memory. At any next data read command, last downloaded event data log is a pattern for reviewing current RD memory content. The events that occurred at later time will be downloaded as supplement to existing database built on PC. The loss of the last data in database may be restored by reading and downloading RD memory content again.

## **7. How precise is clock timing in the RD receiver and can it be user adjusted?**

RD internal clock-timer features quartz controlled timing and cannot be user adjusted. In fact, it is not a real time clock counting minutes, hours and days. Instead, it is a fairly simple counter of seconds. With a new command received from key-fob transmitter, current counter value as well as key-fob transmitter number are recorded in the RD event memory. So, how can later reviewed PC database show exact date and time of events? It is the download procedure that synchronizes the PC internal clock with the RD timer allowing "RD reader" software to calculate true dates and times of the events (format: yy-mm-dd & hh:mm:ss) that are saved to database file.

The RD clock-timer is software protected against resetting on power off failure. In case of power off, counter timer current value is recorded in non volatile memory wherefrom it is continued to count on power supply restore. Though protected against resetting, the internal clock is not protected against stopping the time count on power off failure. Only battery supported powering of the receiver can provide full protection.

Other RD clock-timer limitation is that it overflows after approximately a month time counting. This has a little meaning as two consecutive events must be saved in the RD memory within a month time span not affecting the time count. In typical system wherein at least one person uses key-fob transmitter daily continuation of time count in the RD is not endangered.

## **8. How to use data downloaded from RD receiver?**

The "RD reader" software allows reading out and saving of event chronological data log to PC in form of Microsoft Access (\*.mdb) database file. Advanced editing, reporting and listing of the \*.mdb data file content is unlimited and may be done using commercial Microsoft Access, Lotus Approach or freely available Base from Open Office software tools.

## **9. What is the database structure made by the "RD reader" software?**

Setting a new database with appropriate command tool (menu File->New Database), the "RD reader" application saves "template.mdb" file to a new name file specified by the user with the advantage of possibility of redesigning the file and include additional tables, requests and reports at later date.

Any next set database using File->New Database command will include new components. User is reminded of making double copies of database files for reason of security.

The "template.mdb" file includes two important tables of which structure should remain unchanged:

- a) "EVENTS" - most important database containing list of events recorded in the RD receiver,
  - b) "USERS" - containing names of the RD system users with the numbers of their key-fob transmitters.
- This table is used to display user names as well as for sample report and query.

Table "EVENTS" contains the following fields:

INDEX - key of the table, auto number type field containing event number. Events should be sorted by this field in all queries rather than by DATE;

TIMER - recorded "momentary" RD internal time of particular event occurrence,

DATE - date and time calculated at time of RD event data download,

USER\_NO - number of used key-fob transmitter. This identification number is displayed on receiver's LED display every time transmitter is used.

BUTTON - number of button used in two button key-fob transmitter.

Table "USERS" contains the following fields:

INDEX - key of the table,

NAME - name of user,

USER\_NO - number of key-fob transmitter of that user,

DATE\_START - date from which the user started to use the key-fob transmitter,

DATE\_STOP - date from which the user stopped using the key-fob transmitter.

The assignment of most of the fields is generally clear. However, two last fields of USERS table need some explanation as in the sample situation below.

John had been given a key-fob transmitter No 5 to access car parking he had been leaving his car at in months of January and February. For reason of unpaid parking fees his transmitter has been cleared in the RD receiver memory and a new user's transmitter has been learned to that memory cell. So, in order to differentiate both users in reports DATE\_START and DATE\_STOP fields are implemented. The system operator should be aware of the need to fill empty field DATE\_STOP with any far date, e.g. 2019-12-31 otherwise user's name will not appear on "RD reader" screen.

Besides the fields described earlier, the "template.mdb" database includes one sample query named EVENTS with a respective report making use of DATE\_START and DATE\_STOP fields. Generated report based on that query contains listing of all user oriented events recorded by the RD receiver. Important!

The EVENTS query may be modified only in SQL editor. Attempt to use graphic editor will fail and data will be disrupted.

The USERS table contains couple of sample entries. They will be transferred to any newly formed database where the entries can be edited or simply cleared.

## **10.What commercial software can be used to work on database made by "RD reader" software?**

Database files formed by "RD reader" software can be opened by any software capable of reading \*.mdb files such as Microsoft Access(r), Lotus Approach(r) or Base(r) from Open Office.

## **11.How frequently RD event memory data should be PC downloaded?**

The regularity of RD event memory download to personal computer database depends on number of key-fob transmitters in a system. Supposing double use of every transmitter daily, ten transmitters will overflow receiver's memory after approximately 300 days while 448 transmitters will overflow after only 6 days!