

TachoDrive key + TachoDrive Express software



Instruction manual

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0. Introduction

The present manual will guide You, step by step, how to download the data from tachograph or driver card safely, using the **TachoDrive (TD)** key, as well as handle the **TachoDrive Express (TDE)** software confidently.

The manual describes the **TachoDrive Express** application in 3.4 version.

CAUTION:

- The information included in this manual may be changed without any represents no obligation on the part of MATT company.
- The description is based on the software version available at the time this document was printed. We reserve the right to change the technical details of the descriptions, information and illustrations in the instruction manual.
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CAUTION:

In order to ensure the proper working of the TachoDrive device and the TachoDrive Express software, it is essential to have their latest version available. It can be downloaded from the manufacturer's webpage.

1. TachoDrive device

1.1 General description

1.1.1 TachoDrive areas of use

The *TachoDrive* device, as well as the included *TachoDrive Express* software, are designed for downloading the data from all approved digital tachographs, compliant with the Annex 1B, from drivers cards and transferring and storing such data on the PC.

The *TachoDrive* allows to fulfill the requirements imposed by the legislator in the scope of digital tachographs system service for workshops as well as fleet company owners drivers and controlling authorities.

1.1.2 TachoDrive characteristic

- The *TachoDrive* device is equipped with 512MB * of internal memory
Allows to store the data of over 10000 cards or more than 500 full quarterly downloads from the tachograph, or a combination of both
- Compatible with every digital tachograph compliant with the Annex 1B,
- build in, licensed from Microsoft FAT system
- Does not require any additional source of power (it is powered by the tachograph or PC).
- Allows to store the data in any of the three standards: *.DDD, *.A1B, *.TGD.
- Flash information using LED, regarding the *TachoDrive* key operational status
- Included *TachoDrive Express* software allows to:
 - § configure the key to, i.e.: download and save the driver activities from a specified period of time, detailed speed data, etc.
 - § visualize of the range of the downloaded data,
 - § its storage in a safe encrypted form,
 - § send the data by e-mail or save it on a CD.
- Thanks to the USB 2.0 interface and a big memory capacity, one can use *TachoDrive* as a standard flash memory device to transfer the data
- Possibility to update the TachoDrive firmware via Internet
- Manufactured pre-configured and ready for use.
- Card – tachograph switch allows to quickly specify where the data is to be downloaded from (from the tachograph memory or the driver card).

*- previous versions of the device, are equipped with 128MB or 256MB of memory

1.1.3 TachoDrive key description



- 1 – USB port
- 2 – tachograph-card switch (here in a - download from tachograph - position)
- 3 - LED 1 – data transmission status
- 4 - LED 2 – information about TachoDrive status / errors
- 5 – Tachograph download port

1.1.4 Delivery schedule

- TachoDrive device
- TachoDrive Express software (on the TachoDrive key memory)
- Jumper – indispensable to change the TachoDrive firmware
- Instruction manual (on the TachoDrive key memory)

1.1.5 System requirements

- PC with Windows® 2000, XP, Vista, Windows 98 SE® * system
- At least Intel Celeron 800 CPU,
- RAM 128 MB,
- USB port
- At least 5MB of free hard drive space to install the *TachoDrive Express* application

* Drivers for Windows 98 SE® system are available on the TD manufacturer webpage

1.1.6 TachoDrive technical data

Memory capacity	512 MB, from which <ul style="list-style-type: none">• ca.500 MB for downloading files (equivalent of ca. 10000 driver cards or ca 500 quarterly downloads from the tachograph memory)• the rest includes the TachoDrive Express installation, manual, configuration file, TD serial number file
Ports	<ul style="list-style-type: none">• USB 2.0 interface, A-pin• Normalized 6-Pin digital tachograph interface
Dimensions	L. 120 x W. 27 x H. 11 mm
Weight	20 g

Declaration of conformity:	<p>The manufacturer hereby declares that the TachoDrive device complies with the requirements of the 89/336/EEC (EMC) regulation providing it is used according to the instruction manual.</p> <p>The relevant declaration is available on the manufacturer's webpage.</p>
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1.2 Working with TachoDrive key

1.2.1 Connecting to the computer

Insert the TachoDrive directly to the free USB port in Your PC. If the access to the USB port is somehow hindered, i.e.: it is at the back of the PC, You can use the USB extender.

After connecting the TachoDrive key to the PC, the LED1 should shine with a green light informing about the data transmission status. After few seconds the LED will start pulsating to inform us about TachoDrive preparing to work. The device will be recognized by the operating system as a Mass Memory Device. The system will install appropriate drivers. When the LED turns constant green, it means that the TachoDrive is ready for transferring the data, i.e.: installing the TachoDrive Express or transferring already downloaded files.

The LED 1 shining with constant green will inform You about finishing the process of transferring the data.

IMPORTANT! Do not disconnect the TachoDrive from the PC during the data transfer. It can damage the FAT file system or the TD disk.

1.2.2 Downloading data from digital tachograph

As it has already been mentioned, the TachoDrive is manufactured pre-configured which means that You can start downloading the data from the tachograph right away. You must bear in mind however to set the switch into a data that You want to download: from tachograph or driver card inserted in the tachograph.

For many reasons, some errors may occur during the data download (i.e.: service error, TachoDrive memory error), these are signaled by the flash codes. The codes description can be found in the Flash Codes section.

The TachoDrive allows to download the data from tachograph as well as driver card.

CONDITION! In order to download the data from the driver card, the card must be valid and inserted into the tachograph. It is necessary to insert a company, workshop or control card into the second slot.
The card is not needed while downloading the data from the tachograph.

CAUTION While downloading the data from tachograph or card, the data is only being copied. Therefore, all the data on the driver card and tachograph remains unchanged.


IMPORTANT! One must not disconnect the TD key from the tachograph during the data transfer. Such action can cause save errors on the key disc. If such situation takes place, it is necessary to format the key memory. One should previously copy all the data that is not damaged into a safe location. Formatting the key memory means that all the data will be lost. It is necessary to configure the key again after formatting and start the download process again.

1.2.2.1 Permitted card combination for digital tachographs (compliant with Annex 1B)

		SLOT No. 2				
	CARD in the tachograph slot	None	Driver	Company	Control	Workshop
SLOT No. 1	None	V	V	V	V	V
	Driver	V	V	V	V	X
	Company	V	V	X	X	X
	Control	V	V	X	X	X
	Workshop	V	X	X	X	X

V – correct combination
X – cards conflict

1.2.2.2 Downloading data from tachograph

- Turn the ignition switch ON.
 - Insert the company or workshop card into the tachograph.
 - Wait 1-2 minutes until the communication between card and tachograph is completed.
-
- 

- Insert the previously configured TachoDrive key into the tachograph front slot (switch in the “vehicle position”).
-
- Take the key out when the L1 and L2 LEDS turn green
- CAUTION!** If one of the LEDS turn red, check its meaning in the “**Flash codes**” page 12
- Transfer the data into the TachoDrive Express or TACHOMATT Yellow software.
 - If You are downloading all the data from the tachograph – because You have configured the key that way – it can take up to 30 minutes. The longest blocks are the ones of detailed data regarding the speed and driver activities.

1.2.2.3 Downloading data from card

- Turn the ignition switch ON.
- Insert the company card into the tachograph.
- Insert the driver card into the tachograph.
- Wait 1-2 minutes until the communication between card and tachograph is completed.



- Insert the previously configured TachoDrive key into the tachograph front slot (switch in the "card position").

-
- Take the key out when the L1 and L2 LEDS turn green

CAUTION!

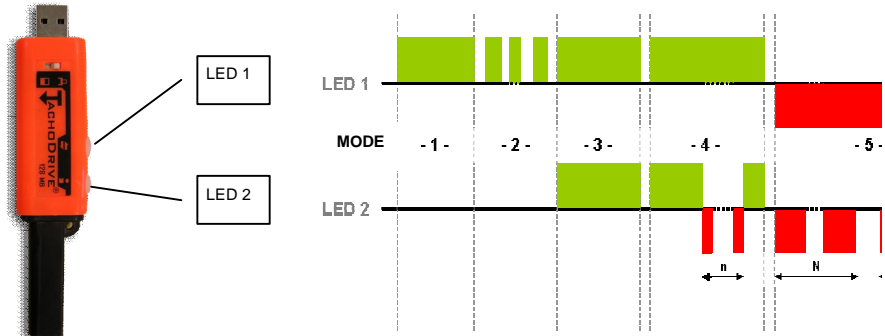
If one of the LEDS turn red, check its meaning in the "**Flash codes**" page 12

- Transfer the data into the TachoDrive Express or TACHOMATT Yellow software.
- The data from driver card is always being downloaded in full (ca. 28 days)

IMPORTANT!

In order to prevent any data loss from the database, one should regularly backup the "C:\Program Files\TachoDrive\data" folder.

1.2.3 Flash codes



Activity mode	Description	REMARKS
1	During connection	
2	Data transmission	
3	The data has been downloaded successfully	
4	The data has been downloaded - WARNING	
	n=1 the card is full in more than 95% of its capacity	Transfer the data from the key to the PC
	n=2 the data has been downloaded partially or not at all	Reason: no data found in the tachograph for the given period or company card number
	n=3 the data from the TD configuration settings has been downloaded partially	Reason: there is no DTCO-1381 specific data for the tachograph – change the TD configuration
	n=4 the data from the TD configuration settings has been downloaded partially	Reason: there is no driver card in the tachograph – change the configuration of the TD key or insert the card and repeat the download process
5	ERROR – while downloading	
	N=1 Incorrect conditions to execute the operation	i.e.: lack of card authorizing to download the data, ConditionsNotCorrect or RequestSequenceError
	N=2 demanded data is not available	i.e.: lack of driver card while trying to download the data from the card, DataNotAvailable
	N=3 Unable to execute the operation	UploadNotAccepted
	N=4 The function is not supported by the tachograph	General reject, Service not supported, Subfunction not supported, Incorrect message length, Request out of range
	N=5 The tachograph is not responding	
	N=6 Tachograph communication error	
	N=7 TachoDrive memory error	Format the memory or contact the seller

2. TachoDrive Express software

2.1 Installing the TachoDrive Express software

1. Turn the PC on and wait until the system is loaded.
2. Connect the TachoDrive key to the free USB slot in Your PC – system will recognize it as a mass memory device – a disc with TACHODRIVE label – and will install drivers automatically
3. After displaying the content of that disc, You will find given below application on it

Install TachoDrive Express.exe

4. In order to install it, double click the icon. The software installation process will start. Follow the manual steps displayed on the screen of Your PC
5. The application will display the login window (if you didn't uncheck the *run the program after installation* option),

The default login values are as follows: Login: **admin** Password: **admin**

ADVICE!

It is advised to change the password after running the software for the first time (TachoDrive configuration, page 8)

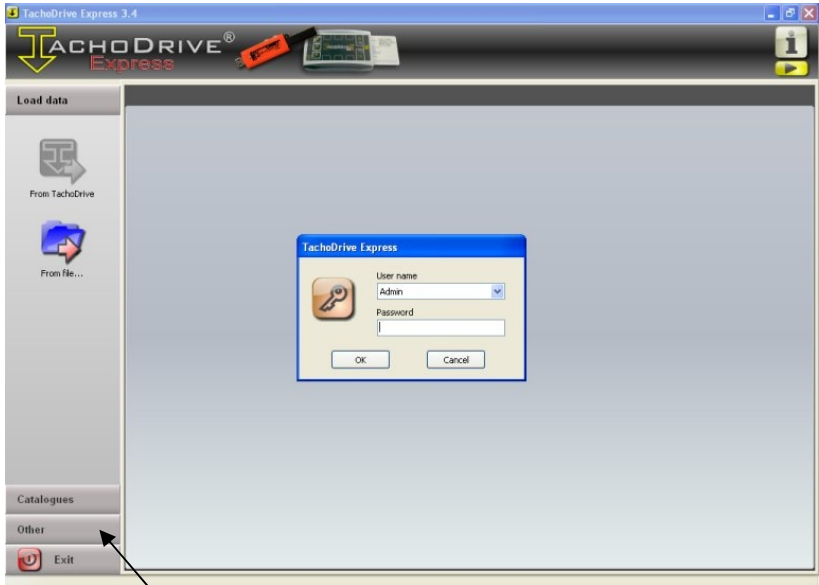
6. The software is ready for use.

You can start downloading the data from tachographs unless there is a need to change the key configuration.

2.2 Running TachoDrive Express application



- An icon – shortcut to the TachoDrive Express application, will appear on the PC desktop after the installation is finished.
- Double click the icon to run the program. The first window of the program will appear with a logging window.
- Enter the “admin” password to log in for the first time.



- Select “Other” tab and then click the “Configuration” icon



2.3 TachoDrive configuration

TIP!

With the manufactured pre-configured TachoDrive device You can immediately start downloading the data. Such configuration allows You to archive the tachograph and driver card memory.

If You are going to change the configuration, follow the steps in the manual.

- After clicking the Configuration icon, the device configuration window will appear as well as application configuration window.

Device configuration

One should check the desired data blocks in the “Device configuration” window that are to be downloaded from the tachograph or driver card for archiving and analyzing purposes. The legislation in Your country specifies what data blocks should be downloaded and their format (DDD, A1B, TGD).

The data blocks description as well as available file formats can be found in the further part of this manual, in the Files format appendix.

Saving selected options is done by clicking the following button:



However, if You would like to restore the default configuration,

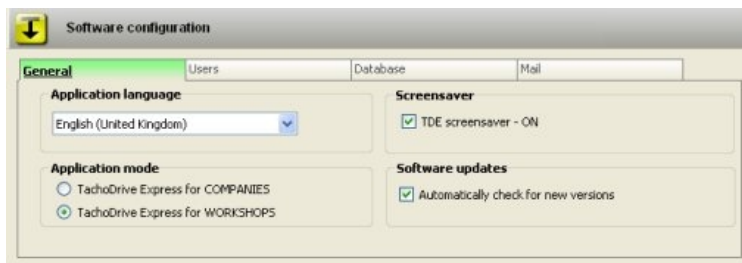
one should click the following button:



Software configuration

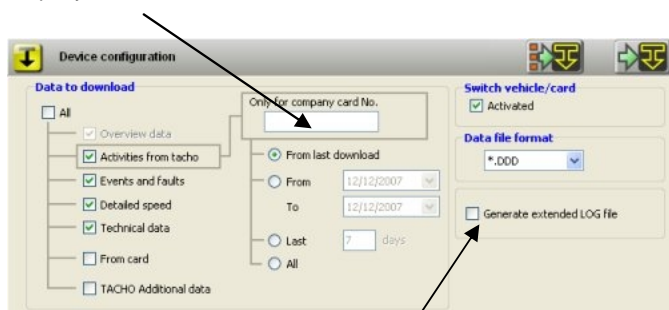
You can add new users and their passwords in the “Users” tab of the “Software configuration” window.

You can check the size of Your database in the “Database” tab.



The next tab is the “General” one where You can select the *Application language*, *Loading and saving data options* where You can choose whether the files from TachoDrive should be deleted after being loaded into the software or not, and the *Application mode* – where one can specify if the software is being used in a transport company or a workshop (tachographs service).

If the software is being used in the workshop, check the “TachoDrive Express for WORKSHOPS” option – an additional option will appear in the “Device configuration” window then. It is a window where one can enter the card number of the company that has asked for downloading the data. After entering the number, saving the configuration on the TachoDrive and downloading the data from customer’s tachograph, You are sure that the downloaded data will refer only to the company that owns that card.



“Generate extended log file” – by default, this function is switched off . It is used only for diagnostic purposes, by distributor or manufacturer. This allow to recognize the problem if the data from tachograph or drivers card cannot be downloaded. This extended LOG, stored in the internal memory of TachoDrive, should be send to the distributor.

2.4 Loading the data to the software

The data can be loaded into the TachoDrive Express in two ways:

- directly from the TachoDrive device
- from file

2.4.1 Types of data

The TachoDrive allows to download single data blocks as well as all blocks simultaneously. These blocks include given below data from digital tachographs and driver cards:

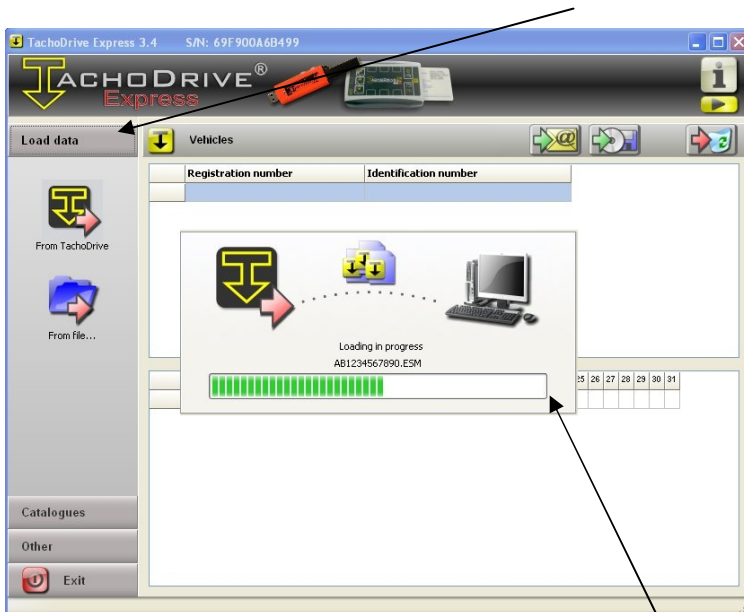
ON	Data block	Description
1.	General information	<ul style="list-style-type: none">- Vehicle Registration Number – VRN- Vehicle Identification Number – VIN- Registering Member state of the vehicle- Data transmission time – according to the tachograph UTC time- Company locks- Period that can be downloaded - from- Period that can be downloaded - to- Last download on- Last download with (tachograph card identifier)
2.	Activities	<ul style="list-style-type: none">- Driver 1 activities- Driver 2 activities
	Events and faults	<ul style="list-style-type: none">• Events<ul style="list-style-type: none">- Driving without an appropriate card- Over speeding- Card conflict- Card insertion while driving- Driver card data relating to the last trip incomplete- Power supply interruption- Sensor malfunction (communication with sensor disrupted)- Security breach attempt• Faults<ul style="list-style-type: none">- Device malfunction- Sensor malfunction (internal sensor error)- Clock malfunction- Malfunction during data download- Display malfunction- Card malfunction (communication with card disrupted)
3.	Detailed speed data	The speed of the vehicle registered by every second, including the data and time, during the last 24 hours of driving time


ON	Data blocks	Description
4.	Technical data	<ul style="list-style-type: none"> • Vehicle Identification Number • Tachograph data entered by the manufacturer: <ul style="list-style-type: none"> - tachograph serial number - tachograph version - software version - software installing version - and other • Sensor data entered by the manufacturer • All tachograph calibrations
5.	From card	<ul style="list-style-type: none"> - Driver-related data - Driver activities including information on driven vehicles - Events and faults
6.	DTCO specific data *	<ul style="list-style-type: none"> - Speed profile - RPM profile (if the data is available) - Additional information

* - This data block is only available in the Siemens 1381 tachograph

2.4.1 Loading data from the TachoDrive



In order to load the data from TachoDrive, one should select the *Load data* tab,



and then click the  icon to start and display the data transfer window

The data has been loaded.

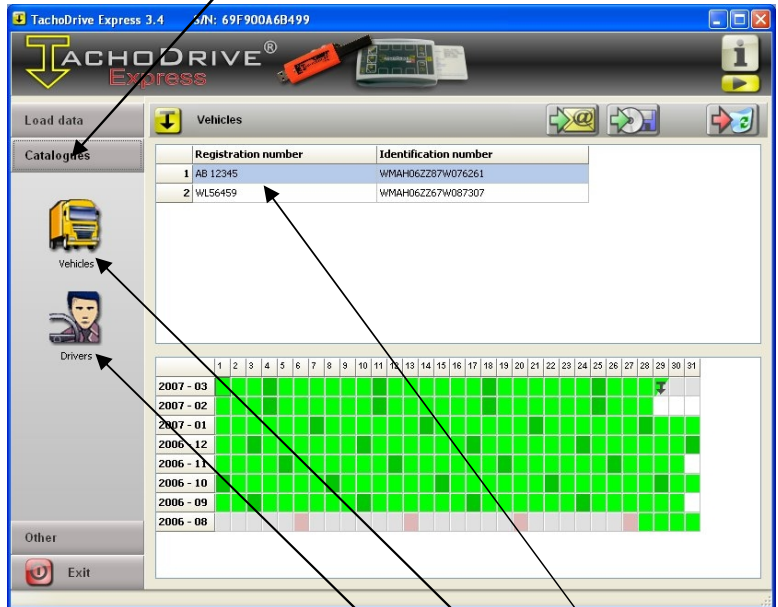
2.4.2 Loading the data from file

 If You click the  icon, an additional window will appear where one should select a file that is to be loaded.
This function can also be used to load the data from devices of other manufacturers.

2.5 Viewing files in the software

2.5.1 Vehicles files

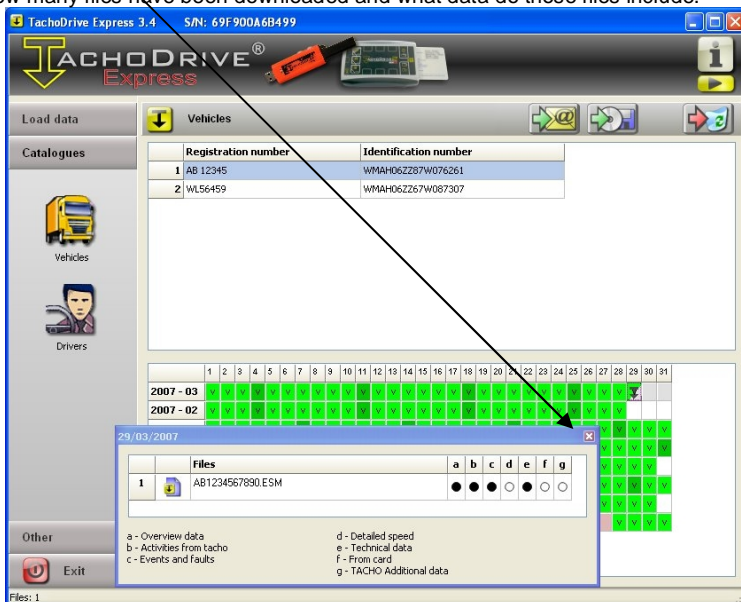
After loading files to the TachoDrive Express software You can view them by clicking the *Catalogues* tab.



You can choose one of two icons: *Drivers* and *Vehicles*.

In the window above, the *Vehicles* icon has been chosen. There are two vehicles visible there that the data has been downloaded from. We can see information in the calendar in the bottom part of the screen, regarding files download. There is a data of the download marked in the calendar - 29.03.2007 from the vehicle highlighted in blue.

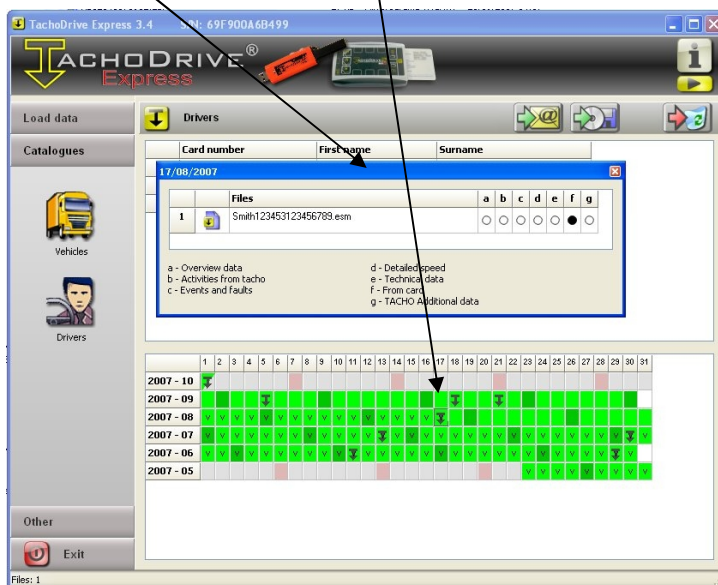
If You click that day, an additional window will appear with a detailed information such as: how many files have been downloaded and what data do those files include.



Black dots in the columns marked with letters specify, what data is included in a given file (i.e.: a – general information, c – events and faults, etc.) There is also an information on the bottom bar specifying how many files have been downloaded for a given vehicle in that day.

2.5.2 Drivers files

Information regarding files downloaded from driver cards are presented in a similar way to the ones presented in the Vehicles section. Clicking a given driver name and a day when the data has been downloaded on will open a window with information about the number of downloads from the driver cards with an "f" column marked – data from card.



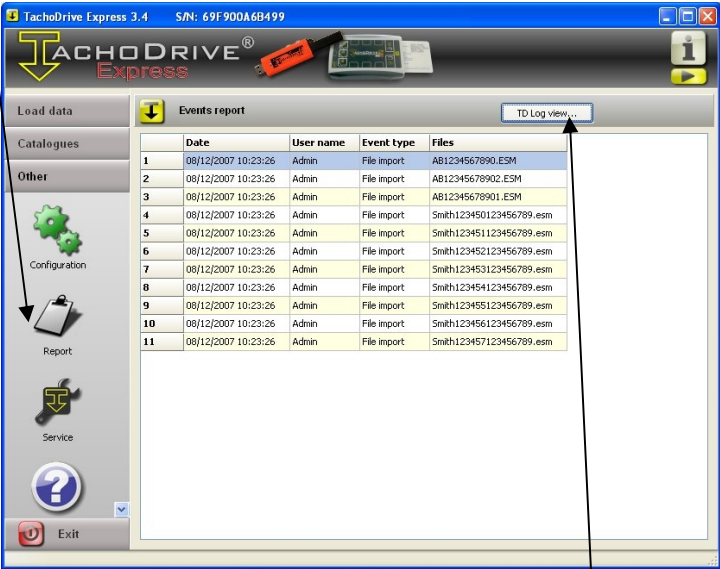
Green fields represent the period of time that the data has been downloaded for, that is from the first activity to the last one before the download. In this case it is from 29.05.2007 to 17.08.2007.

The 17.08.2007 is the last day of data download from this card and that is why it is marked with a gray-green color, because we do not have certainty that there were no any other activities saved after we have downloaded the data. During the next card download (following days) the information regarding that day will be supplemented.

The "v" symbols on the green fields represent days that belong to a given download. It is the period from 29.05.2007 to 17.08.2007 in the presented example.

2.6 Events report

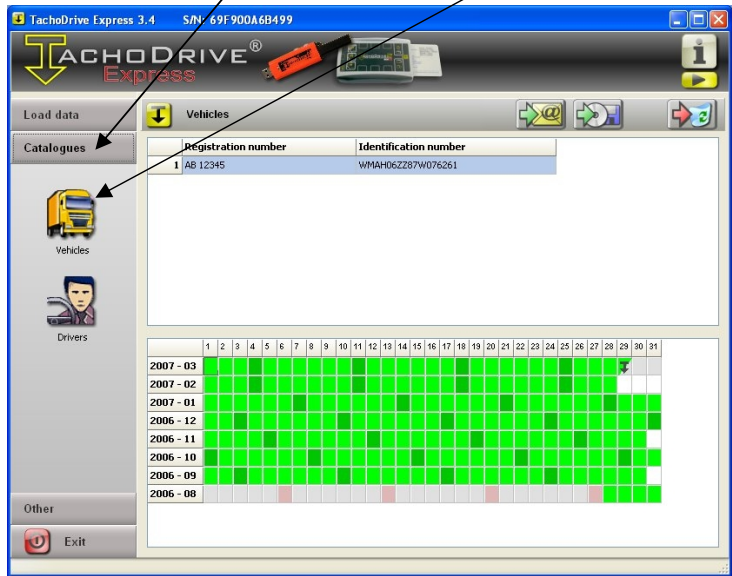
You must click *Other* tab and then *Report* icon in order to get to this function.
All operations regarding files management, such as: loading, deleting, sending by mail or saving on the hard drive, are listed in the *Events report*.
There is also an information who performed a given action (it is the Administrator in this case).



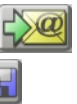
Only in "workshop mode"

2.7 Copying files

- Select the Catalogues tab and then i.e.: Vehicles.



- A list of vehicles will appear
- Select a vehicle by highlighting it in blue
- Now You have two options
 - You can send the data by mail by clicking the following icon:
 - or
 - Copy it to any other drive by clicking the following icon:



CAUTION! Files stored in the database of TDE application are encrypted. However files sent or copied become open.

2.8 Service Function

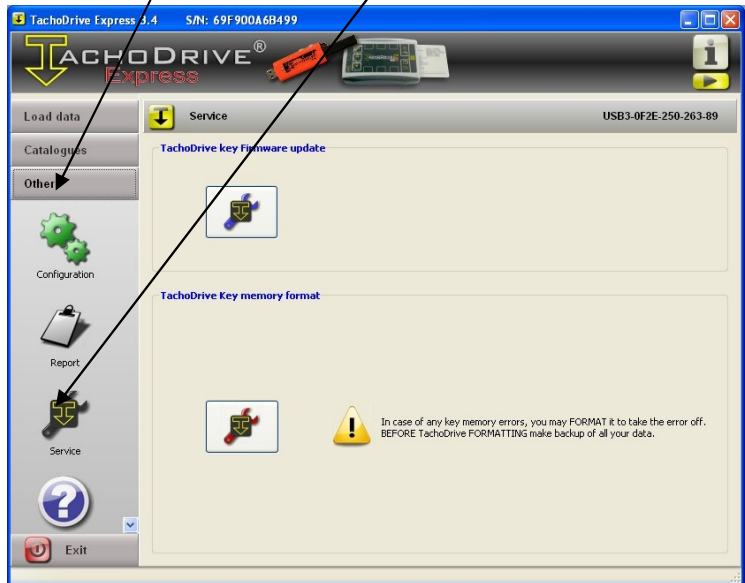
2.8.1 Updating the TachoDrive firmware

The TachoDrive device has a possibility to exchange its software – firmware into a later one – the, so called, update.

After installing the latest version of the TachoDrive Express application and connecting the TachoDrive device to the USB port of the PC, program will automatically recognize if the TachoDrive has the latest firmware. If not, a procedure informing the user how to do the update step by step will be displayed after the user confirms the desire to do it.

The update can also be done later, in the given below way:

- One clicks the Other tab on the left side of the application main window and then Service.



- Select an icon described as: TachoDrive key firmware update and follow the steps displayed on the screen.

2.8.2 Formatting TachoDrive memory

There is a formatting key memory icon just under the key update in the Service function. Formatting is necessary in case of FAT files allocation system of the internal key memory being damaged, i.e.: the key has been taken out of the tachograph while downloading the data.

CAUTION! Formatting the key will remove all files saved in the TachoDrive memory. In order to avoid that, copy the files from the key, if it's possible, i.e.: to the PC hard drive.

After clicking that icon the software will ask if you really want to format the TachoDrive. If yes – you confirm it.

3. Attachments

3.1. File name formats

The downloaded files can be saved in the TachoDrive memory in one of the three different header formats.

Files can have such extensions as: *.DDD, *.TGD, *.A1B.

Based on the information included in the header we can also specify the following:

- Vehicle and driver that the data is concerning
- Time and date of the data download
- Type of data

See the table located on the next page.

CAUTION: The content of the file does not depend on the format header. Files are recognized and imported by most of the applications used for their analysis in all three formats, i.e.: TACHOMATT Yellow. You need to establish, however, what format is obliging in Your country.
We can select the header format in TachoDrive Express or TACHOMATT Yellow by going to the OTHER / Settings tab.

3.1.1 File names valid for the rest of Europe

Data type	File name	Description
Mass data	M_YYYYMMDD_HHmm_XXX...X_ZZZ...Z.DDD	
	M	„Mass Memory Data“ identifier
	YYYY	Year
	MM	Month
	DD	Day (UTC)
	HHmm	Hours, minutes (UTC)
	XXX...X	Vehicle Registration Number; VRN
	ZZZ...Z	Vehicle Identification Number; VIN
	.DDD	„Digital Download Data“ file format
Driver card data	C_YYYYMMDD_HHmm_A_BBB...B_NNN...N.DDD	
	C	“Card Data” identifier
	YYYY	Year
	MM	Month
	DD	Day (UTC)
	HHmm	Hours, minutes
	A	First letter of the driver's first name
	BBB...B	Driver's surname
	NNN...N	Driver card number
	.DDD	“Digital Download Data” file format
Siemens spec. data	S_YYYYMMDD_HHmm_XXX...X_ZZZ...Z.DDD	
	S	“Siemens Specific Mass Memory Data” identifier
	YYYY	Year
	MM	Month
	DD	Day (UTC)
	HHmm	Hours, minutes (UTC)
	XXX...X	Vehicle Registration Number; VRN
	ZZZ...Z	Vehicle Identification Number; VIN
	.DDD	“Digital Download Data” file format

3.1.2 File names for France

Data type	File name	Description
Mass data	CCCCRRRRRRRRRRRRRRYYMMDDHHmm.V1B	
	CCC	3-lettered country code; i.e."PL_"
	RRRRRRRRRRRRRR	Vehicle Registration Number; VRN
	YY	Year
	MM	Month
	DD	Day (UTC)
	HHmm	Hours, minutes (UTC)
	.V1B	"Vehicule Appendix 1 B" file format
Driver card data	CCCNNNNNNNNNNNNNNNYYMMDDHHmm.C1B	
	CCC	3-lettered country code; i.e."PL_"
	NNNNNNNNNNNNNNN	Driver card number
	YY	Year
	MM	Month
	DD	Day (UTC)
	HHmm	Hours, minutes (UTC)
	.C1B	"Carte Appendix 1 B" file format
Siemens spec. data	S_ CCCCCRRRRRRRRRRRRRRYYMMDDHHmm.A1B	
	S	"Siemens Specific Mass Memory Data" identifier
	CCC	3-lettered country code; i.e."PL_"
	RRRRRRRRRRRRRR	Vehicle Registration Number; VRN
	YY	Year
	MM	Month
	DD	Day (UTC)
	HHmm	Hours, minutes (UTC)
	.A1B	"Appendix 1 B" file format

3.1.3 File names for Spain

Data type	File name	Description
Mass data	V_NNN...N_CCC_YYYYMMDD_HHmm.TGD	
	V	„Vehicle Unit“ identifier
	NNN...N	Vehicle Registration Number; VRN
	CCC	3-lettered country code; i.e.„PL_“
	YYYY	Year
	MM	Month
	DD	Day (UTC)
	HHmm	Hours, minutes (UTC)
	.TGD	File format
Driver card data	C_MMM...M_CCC_YYYYMMDD_HHmm.TGD	
	C	“Card Data” identifier
	MMM...M	Driver card number (16 digits)
	CCC	3-lettered country code; i.e.„PL_“
	YYYY	Year
	MM	month
	DD	Day (UTC) First letter of the driver's name
	HHmm	Hours, minutes (UTC)
	.TGD	File format
Siemens spec. data	S_NNN...N_CCC_YYYYMMDD_HHmm.TGD	
	S	“Siemens Specific Mass Memory Data” identifier
	NNN...N	Vehicle Registration Number; VRN
	CCC	3-lettered country code; i.e.„PL_“
	YYYY	Year
	MM	Month
	DD	Day (UTC)
	HHmm	Hours, minutes (UTC)
	.TGD	File format