aselsan

STC-8250A
Digital Tachograph
Operation Manual

AVU-AGD-OPE

Rev 0.7

19.10.2017

Declaration of Confirmation

This declaration, officially register the confirmation of the product named as

Definition   **: Aselsan Digital Tachograph**

Model   **: Aselsan STC-8250A**

TOE Version   **: v1.1**

According to the Council Regulation (EEC) No. 3821/85 (Annex-1B) on recording equipment

in road transport (EU) dated 20 December 1985 and its latest ammendments.

Product is evaluated according to the following European Union regulations:

1.   Regulation (EC) No. 2135/98

2.   Regulation (EC) No. 1360/2002

3.   Regulation (EC) No. 561/2006

4.   Regulation (EC) No. 1266/2009

5.   AETR Agreement.

$C\epsilon\textcircled{!}$

ASELSAN A.Ş.
Communication and Information Technologies Divison
Mehmet Akif Ersoy Mah. 296. Cad. No: 16
Yenimahalle 06370 ANKARA
Phone: +90 312 592 10 00
Fax: +90 312 354 13 02

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Safety

Before using your STC-8250A digital tachograph, please read this operation manual.

General Precautions

ALWAYS use only ASELSAN authorized accessories. (Download devices, calibration tools, cables and etc.).

Other unauthorized accessories have the risk of fire hazard, explosion, personal injury or damage to the STC-8250 digital tachograph.

Risk of Accident!

For traffic safety reasons, please do not attempt to insert or withdraw the driver card(s) while the vehicle is moving!

Caution!

Changes or modifications to your STC-8250 digital tachograph may void its compliance with government laws/rules and make it illegal to use.

Avoid using the STC-8250 digital tachograph at temperatures below -25°C or above 70°C.

Avoid storing the STC-8250 digital tachograph at temperatures below -30°C or above 75°C.

Caution!

If the STC-8250 digital tachograph is stored more than 30 months on the shelf without installing to the vehicle, the battery in the tachograph is discharged and encryption keys can be erased because of it. In this case, "Internal fault - 032-xxx-000-000" warning appears and tachograph will be useless. To avoid this, please make the battery changed in the certified Workshops before due date.

Please read this operating instructions carefully before using your STC-8250 digital tachograph.

INTENTIONALLY LEFT BLANK.

Introduction

General

The ASELSAN STC-8250A digital tachograph (hereinafter abbreviated as STC-8250) is a secure recording device which records the driving times, work periods, availability periods and rest periods of the driver and co-driver. Additionally, STC-8250 automatically records the speed and distance covered by the vehicle. The securely recorded vehicle and driver related data by the digital tachograph serve as proof for the controlling bodies (e.g. police). The digital tachograph STC-8250 complies with the technical specifications as specified in the Commission regulation (EC) No. 1360/2002 of 13 July 2002 and Commission regulation (EC) No. 1266/2009 of 16 December 2009, the 7th and 10th adaptations of Council regulation (EEC) No. 3821/85 to the technical progress of Recording Equipment in Road Transport respectively.

This user guide is for all STC-8250 users (especially for drivers and company representatives also for workshop staff and control bodies). The user guide describes the proper use of the digital tachograph STC-8250 as specified in the regulation. Read the corresponding sections carefully and familiarise yourself with the operation of the STC-8250 digital tachograph.

Notational Conventions

The following notational conventions are used in this document.

Warning Message

A warning message indicates potential risk of injury or accident.

Attention!

The text nearby this symbol contains critical information to prevent damage to the device, to avoid loss of data or to obey legal obligations.

Hint

The hint sign will give you some guidance, information or clues which is beneficial for you if it is taken into account.

Book

The book sign indicates to a reference to another documentation.

Symbols

∗ The asterisk mark indicates a special feature or option.
➔ The reference sign indicates that the related issue will be explained detailly in the given pages.

Steps

1. The numbered steps describes actions for the given step by step instructions.
2. Subsequent actions are numbered.

Legal Requirements

The use of digital tachographs is administrated by the latest consolidated valid version of the EC regulation (EEC) No. 3821/85 Annex-IB together with EC regulations (EC) no. 561/2006. These regulations assign a number of responsibilities to the driver and the owner of the vehicle (company). It is illegal to misrepresent, deactivate or delete recordings of the digital tachographs and the tachograph cards. Also it is forbidden to falsify printouts. Modifications of the digital tachograph or its electronic signals or data links, especially if made with the intention of cheating, is forbidden and shall be punishable according to the legal stipulations.

Driver Responsibilities

As the driver, you must ensure proper use of the digital tachograph and the driver card. If the digital tachograph is malfunctioned, you must report the activities that is incorrectly recorded on a separate sheet or on the reverse side of the printout. The notes must be accompanied by your personal hand-written data (name, number of driver card, signature). If your driver card is lost or damaged, or if it malfunctions, you must create a daily report after your journey. This report is to be accompanied by your hand-written data and signature. If your driver card is damaged or malfunctions, submit it to the responsible authorities as soon as possible. Always notify the responsible authorities in your country of the loss of your driver card immediately.

> ⚠️ *Without inserting a valid workshop card, any disconnection of the vehicle's battery from the vehicle's electrical system will be recorded as a power supply interruption by the digital tachograph. Always have your vehicle battery disconnected or tachograph battery replaced by an authorised workshops and make sure the valid workshop card is inserted.*

Company Responsibilities

As company representative, monitor the digital tachograph and the tachograph card to make sure that it functions properly, ensure that the vehicle and calibration data is entered in the digital tachograph by an authorised workshop, ensure that your drivers use the digital tachograph and the drivers' cards properly, instruct your drivers to comply with the driving times and the rest periods.

The company or the tachograph owner has to administrate a workshop inspection of the tachographs and store records from the inspection. It is the owner's or company's responsibility to renew this inspection within every two years.

The STC-8250 digital tachograph must be additionally inspected, when

- the vehicle's tyre circumference has been changed,
- the revolution ratio has been changed,
- the registration (VRN) or identification (VIN) number of the vehicle has been changed,
- the tachograph's UTC time is differs more than 20 minutes from the correct UTC Time.

Tachograph Version

The operating instructions presented in this operational manual are valid only for the **Aselsan STC-8250A (v.1.1.0)** digital tachograph.

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Configuration

The parts that make up the configuration of STC-8250 Digital Tachograph Vehicle Unit:

1. STC-8250 Digital Tachograph
2. Printer paper,
3. Seal,
4. Screw,
5. Plug,
6. Fixing Screw,
7. Quick start guide,
8. Operation manual.

STC-8250 Digital Tachograph Configuration (Picture showing the configuration will be added)

Getting Started

⚠️ *In order to use your STC-8250 digital tachograph, ensure that it is installed, activated and calibrated according to your vehicle specific parameters at the certified workshops.*

For the Driver and Co-Driver

1. Before starting your travelling, you must insert your driver card (with chip side up) in to the driver slot (the left-hand slot).
   ➔ *Please refer to "Inserting driver and co-driver card(s)" on page 32.*

2. Using the "Manual entry" you can add activities to your driver card.
   ➔ *Please refer to "Manual entries" on page 33.*

3. Use the activity selection button to adjust the activity you want to carry out at that moment.
   ➔ *Please refer to "Setting activities" on page 37.*

4. Adjust the time to the current local time in your region.
   ➔ *Please refer to "Local Time" on page 104.*

5. **Important!** During a rest period or break time, always set the activity to "⊢"

6. In case of any faults or events in the device or system components, a relavant warning message will appear on the display. Acknowledge the warning message.
   ➔ P*lease refer to "Messages, Warnings, Faults and Pictogram Combinations" on pages 45, 64, 76, 86 and 85.*

7. You can print or display the activities from preceeding days as well as saved events, by using the menu functions.
   ➔ *Please refer to "Displaying and Printing Card Data" on page 43-44.*

8. At the end of the driving or working day, you can withdraw your driver card from the card slot.
   ➔ *Please refer to "Withdrawing driver card and co-driver cards" on page 53.*

For the Company

1.   Register your company within the STC 8250. Insert the company card into any of the card slots.

     ➔ *Please refer to "Registration of the Company (Lock-in)" on page 57.*

⚠️ Attention!

The company cards must not be used for driving!

2.   Withdraw the company card from the card slot at the end of the registration or data download.

     ➔ *Please refer to "De-registration of the Company (Lock-out)" on page 62.*

Preparation of the Operational Environment

This section provides detailed information regarding to the security preparation of the operational environment in accordance with the security objectives for the operational environment described in AVU-ST is explained as following.

Security Objectives for the Operational Environment

For each security objective for the operational environment as listed in the AVU-ST, this section shows the steps that the user has to perform in order to make the operational environment fulfil the security objective.

OE.Activation

Vehicle manufacturers and fitters or workshops have to activate the TOE after its installation before the vehicle leaves the premises where installation took place. The activation process have to be completed before using the tachograph otherwise, no cards are accepted from tachograph except from workshop cards (for activation and calibration purposes) and the tachograph does not store any record (activity records, etc.) in its memory.

OE.Approved_Workshops

The workshops or fitters are responsible for installation, calibration and repair of the recording equipment which are approved and trusted by the regulation (Official Journal No: 28171, regarding the regulations of workshop services of tachograph devices, dated 12.01.2012) of the Ministry of Science, Industry and Technology. The Ministry of Science, Industry and Technology governs the regulations and audit the workshop or fitters, which are granted to be approved workshops or fitters.

OE.Faithful_Calibration

According to the regulation (Official Journal No: 28171, regarding the regulations of workshop services of tachograph devices, dated 12.01.2012) of the Ministry of Science, Industry and Technology, the workshops and fitters are responsible for entering proper vehicle parameters into recording equipment during the calibration process. The workshops or fitters have to either use manufacturer specific parameters or measured parameters during the calibration process. The Ministry of Science, Industry and Technology governs the regulations and audit the workshop or fitters.

OE.Card_Availability

Tachograph cards are available to TOE (STC-8250) users and delivered by Member State Authorities to authorized persons only. Card issuance and related application procedures

can be reached from https://staum.org.tr. Each user should apply for the relevant card type to the STAUM Center.

OE.Card_ Traceability

As the member state authority STAUM is responsible to keep the white lists / black lists. If the driver card is damaged or malfunctioned, driver's or company owners have to submit it to the responsible authorities as soon as possible. Responsible authority in country has to be notified of the loss of tachograph cards immediately.

OE. Controls

Control officers are informed by the related member state authorities regarding their responsibilities.

OE.Driver_Card_Uniqueness

Ensuring the driver card uniqueness is the responsibility of card issuing authorities.

OE.Faithful_Drivers

Drivers are informed by the user guidance to properly operate the tachograph. The driver, must ensure proper use of the digital tachograph and the driver card. If the digital tachograph is malfunctioned, driver must report the activities that is recorded incorrectly on a separate sheet or on the reverse side of the printout. The notes must be accompanied by drivers' hand-written data (name, number of driver card, signature). If the driver card is lost or damaged, or if it malfunctions, driver must create a daily report after the journey. This report is to be accompanied by hand-written data and signature.

The company representatives have to ensure that drivers use the digital tachograph and the drivers' cards properly, instruct the drivers to comply with the driving times and the rest periods.

OE.Regular_Inspections

Tachograph needs to be periodically inspected every two years. User is informed by a warning message when the periodic inspection date is approaching.

The company or the tachograph owner has to administrate a workshop inspection of the tachographs and store records from the inspection. It is the owner's or company's responsibility to renew this inspection within every two years.

The STC-8250 digital tachograph must be additionally inspected, when

- the vehicle's tyre circumference has been changed,
- the revolution ratio has been changed,

- the registration (VRN) or identification (VIN) number of the vehicle has been changed,
- the tachograph's UTC time is differs more than 20 minutes from the correct UTC Time.

OE.Type_Approved_MS

Workshops are responsible for pairing the type approved VU with a type approved MS. Necessary instructions for installation of the VU and calibrations exist on this manual.

General Look

Front Panel

The STC-8250 digital tachograph has the following display and control elements.

1. Alphanumeric Display
2. Service (Calibration and Data Download) Interface (6-Pin)
3. Keypad **#1** for the driver (driver#1)
   Short push for adjusting the driver activity,
   Long push for driver card withdrawal.
4. Backspace key ◁I (backspace & clear or cancel)
5. Control key ◁ (backward / previous entry)
6. Card slot **#1** for the driver's tachograph card
7. Control key ▷ (forward / next entry)
8. **OK** Key (call menu, confirm)
9. Keypad **#2** for the co-driver (driver#2)
   Short push for adjusting the co-driver activity,
   Long push for co-driver card withdrawal.
10. Card slot **#2** for the co-driver's tachograph card
11. Printer drawer (for inserting a new roll of paper see section "Paper Roll")
12. Printer paper slot

User Interaction

Display

Display used in the STC-8250 is a Liquid Crystal Display (LCD) with backlight. Display has 2 lines with 16 characters shown at each line. Backlight color choice is optional and can be selected prior to ordering and only be assembled at the factory during production.

The display may be used in different ways:

Basically, the display is used to show information to the user. The display is used to navigate in a menu system together with the four buttons (not the numbered ones).

The display is also used as a feedback when entering information into the tachograph or changing settings.

Display Modes

If the tachograph is not in sleep mode and no need to display warnings or no other menu is selected, pressing the Control keys ◀ or ▶ changes the default display into following screens.

1. Default display (Speed and odometer)
2. Current work periods and activities for driver and co-driver
3. Driving times for driver 1.
4. Driving times for driver 2.
5. Driver and co-driver activities and local time
6. UTC time.

While the vehicle is moving, only the displays #1, 2, 7 and 8 are available for selection.

When the vehicle is stationary, only the displays #1, 3, 4, 5, 6, 7 and 8 are available for selection.

Default Display (Speed & Odometer) (#1)

Normally, (when the ignition is OFF) the tachograph is in sleep (power safe) mode and the display does not show any information in the display window, but a touch of any button or turning ignition ON will wake it up (both illumination and text).
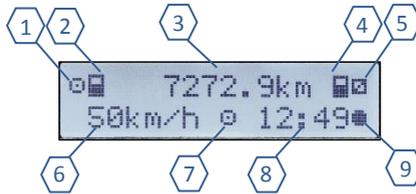
1 Driver 1 activity

2 Driver 1 card symbol

3 Total odometer value

4 Driver 2 card symbol

5 Driver 2 activity

6 Speed

7 Mode of Operation

8 Time (UTC time if "●" symbol is not present)

9 Local time symbol "●".

Current work periods and activities for driver and co-driver (#2)

1 Card slot# 1 (driver)

2 Driver 1 activity (driving)

3 Continuous driving time of driver

4 Valid rest/break time in break periods of at least 15 min. followed by 30 min., in accordance with regulation (EU) no. 561/2006.

5 Card slot# 2 (co-driver)

6 Driver 2 activity (available)

7 Current activity time of co-driver

Weekly Remaining Driving Time for Driver 1 (#3).

```
 1                    2
┌─────────────────────────┐
│ I            ⊙ɰ56h00     │
│ ʮ24h00  ꜛʮ143h59         │
└─────────────────────────┘
 3                    4
```
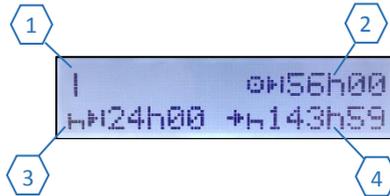
1 Weekly pictogram icon

2 Weekly remaining driving time for

   Driver 1 (in accordance with

   Regulation (EU) no. 561/2006.)

3 Weekly remaining rest time

4 Six-day rest remaining time

Daily Remaining Driving and Rest Times for Driver 1 (#4).

```
 1                    2
┌─────────────────────────┐
│ 24h          ⊙ɰ10h00     │
│ ʮ09h00                   │
└─────────────────────────┘
 3
```

1 Daily pictogram icon

2 Daily remaining driving time for

   Driver 1 (in accordance with

   Regulation (EU) no. 561/2006.)

3 Daily remaining rest time

Driving Times for Driver 1 (#5).

```
 1 2                 3
┌─────────────────────────┐
│ 1○00h35    ▮▮00h00      │
│ 1○▮▮01h43   ✳00h35      │
└─────────────────────────┘
         4           5
```
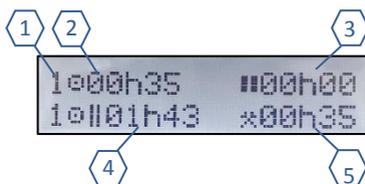
1 Indicates the driver information is shown

2 Drive time since last valid break/rest

3 Cumulative break/rest time

4 Cumulative driving time during the current and previous week

5 Current activity time of driver

Driving Times for Driver 2. (#6)

```
 1   2              3
┌─────────────────────────┐
│ 2○00h00    ▮▮02h04      │
│             ▣01h21      │
└─────────────────────────┘
                   4
```
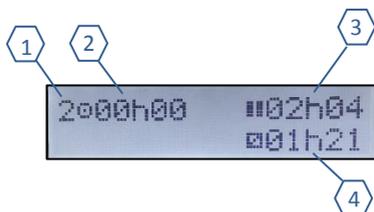
1 Indicates the co- driver information is shown

2 Drive time since last break/rest

3 Cumulative break/rest time

4 Current activity time of co-driver

Driver and Co-driver Activities and Local Time (#7)

```
┌─────────────────────────┐
│ ○▤   10:18:32     ▣     │
│      19/02/2015    ○     │
└─────────────────────────┘
```
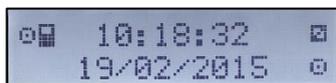
In this display mode, following information is shown (first line) from left to right:

- Symbol for driver activity (driving is shown in this case).
- Card symbol indicates that card is inserted to the card slot#1.
- Current local time.
- Symbol for co- driver activity (driving is shown in this case).

In the second line the following information is displayed.

- Current date.
- Symbol for the current mode of operation (in this case OPERATIONAL mode is shown).

UTC Time (#8)

```
UTC⊕    19/02/2015
08:19:00    +02h00
```

In this display mode, following information is shown (first line) from left to right:

- Pictogram for UTC time.
- Current date

In the second line the following information is displayed.

- Current UTC time.
- Time offset set for the local time.

Special Displays

Activation status

If the STC-8250 has not been activated then the symbol "⊟" will be shown in the display. The STC-8250 will not accept any tachograph cards except the workshop cards.
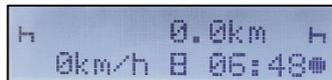
```
⊢        0.0km    ⊢
  0km/h ⊟ 06:48⊛
```

⚠️   *In order to use your STC-8250 digital tachograph, ensure that it is installed, activated and calibrated according to your vehicle specific parameters at the certified workshops.*

Out of scope

When the vehicle is driving in countries where tachograph legislation does not exists "Out of Scope" mode could be activated. When it is activated from the menu the display shows the **"OUT"** symbol on the screen.

```
OUT        48.5km
  0km/h ⊙ 14 45⊛
```

➔ *Please refer to "Out of Scope Condition" on page 40.*

Ferry transfer / Train crossing

When the vehicle is located on a ferry or on a train, the display shows the symbol " ⚓ ".
User action is required to set this functionality from the menu.

➔ *Please refer to "Ferry or Train Condition" on page 40.*

Basic Display Symbols

Symbol	Meaning / Description
⌂	Company, Company Mode
⬛	Controller/inspector, Control Mode
⬛	Driver, driving, continuous driving time
⊤	Workshop/test station, Calibration Mode
⒣	Manufacturer, tachograph not activated
▣	Available, current availability period
⊢	Rest, current rest period
✳	Work, current work period
‖	Break, Cumulative break time
?	Unknown
1	Driver card slot
2	Co-driver card slot
▤	Smartcard
⌷	Clock
▢	Display
⊤	External storage
⊹	Power supply
⊤	Printer/printout
Ⅱ	Motion sensor
O	Tyre size
⊟	Vehicle/vehicle unit (tachograph)
OUT	Out of Scope (digital tachograph not required)
⚓	Ferry/train crossing
!	Events
X	Faults
‖▶	Start of daily work period
▶‖	End of daily work period
●	Location
M	Manual entry of driver activities
🔒	Security

❯	Speed	
🕒	Time	
Σ	Total/summary	
24h	Daily	
|	Weekly	
||	Two weeks	
✚	From or to	

Using the Keypad

OK **OK key:** Calls the menu, confirms a selection, acknowledge a message or warning.

◁I **Backspace key:** Moves back in a menu, clears or cancels the entry, returns to the default display when pressed repeatedly.

◁ **Backward key:** Moves right in a menu to select the desired function or selection. Decreases a value. Toggles options.

▷ **Forward key:** Moves left in a menu to select the desired function or selection. Increases a value. Toggles options.

1 **Keypad #1:** Short push for adjusting the driver activity, Long push for driver card withdrawal.

2 **Keypad #2:** Short push for adjusting the co-driver activity, Long push for co-driver card withdrawal.

Card Slots

There are two card slots where you insert your tachograph cards.

The card slot for the driver is on the left and card slot for the co-driver is on the right. Each card must be inserted all the way to the stop. The cards are locked mechanically and normally they can only be removed electrically with the help of the user action (long pressing the **keypad #1** and **keypad #2**) when the vehicle is stationary.

Printer

The printer is used to provide printed record of information stored in the tachograph.

Inside the printer drawer there is a printer mechanism that holds printer and a roll of paper. The printed paper will come out from a small opening at the top of the printer drawer.

Paper Roll

In order to print the stored information in the tachograph a valid type approved paper rolls (recommended by Aselsan Inc.) should be inserted into the printer drawer. To replace the new paper roll, please obey the following instructions.

1. Hold the printer handle which is lower part of the printer drawer.

2. Carefully pullout the printer drawer until it is open entirely. When it is open entirely the drawer can be freely move up and down. Let the drawer to be at the lowest position to operate easily.
3. Hold and raise the printer lid to upward. Check if any plastic piece exists in the drawer from the old paper roll. If so, remove this plastic piece from the paper holder.
4. Insert new roll of paper as shown in the image below. Keep the feeding part of the paper to be on the upper side and forward it to pass the upper edge of the drawer.
5. Hold and lower the printer lid to downward.
6. Raise the drawer to be the same level with the printer slot and push it gently into the tachograph to close the drawer.
7. Pull the paper upwards and tear it off.

Service (Calibration and Data Download) Interface (6-Pin)

The service interface (6-Pin) which is located on the front panel of the STC-8250 digital tachograph is covered with a silicon cover.

The port has two independent components; a calibration interface and a download interface.

The calibration interface serves the calibration, configuration and diagnostics of the STC-8250 digital tachograph.

The download interface is used to download the data stored in mass memory or on the inserted driver or co-driver smartcard.

Vehicle Dashboard Integration

Some vehicles can display some of the tachograph information on an integrated display. Here are the examples on the type of information that can be displayed:
- Speed
- Total odometer
- Travelled (trip) distance
- Date and Time
- Accumulated Daily Driving Time
- Accumulated Driving Time
- Messages, Warnings, System Events, Faults.
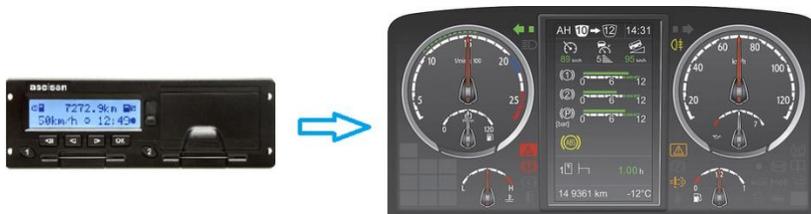
Menu Tree

The following menu three shows the STC-8250 menu structure.

Depending on the mode of the tachograph (which is set when certain tachograph cards are inserted), STC-8250 menu items that can be accessed in the Main menu are changed.

The menu items which is appended "*" symbol following a number in the figures requires some pre-requisities to be accessed.

*1) Only available with insertion of driver or workshop card to the driver slot.

*2) Only available with insertion of driver or workshop card to the co-driver slot.

*3) Only available in the COMPANY MODE.

*4) Only available (once) in the COMPANY MODE if VRN is not entered to the tachograph.

*5) Only available in the CALIBRATION MODE.

```
Menu ── Main Menu ──┬── Driver Menu ──┬── Entry ──┬── Begin Place
                    │                 │           └── End Place
                    │                 ├── Display *1 ──┬── 24h Daily
                    │                 │                └── ! x Events & Faults
                    │                 └── Print *1 ──┬── 24h Daily
                    │                                ├── ! x Events & Faults
                    │                                └── Activity Graph
                    │
                    ├── Codriver Menu ──┬── Entry ──┬── Begin Place
                    │                   │           └── End Place
                    │                   ├── Display *2 ──┬── 24h Daily
                    │                   │                └── ! x Events & Faults
                    │                   └── Print *2 ──┬── 24h Daily
                    │                                  ├── ! x Events & Faults
                    │                                  └── Activity Graph
                    │
                    ├── Vehicle Menu ──┬── Language
                    │                  ├── Entry ──┬── OUT-> Begin or ->OUT End
                    │                  │           ├── Train / Ferry
                    │                  │           ├── Local Time
                    │                  │           ├── UTC Time Correction
                    │                  │           ├── Backlight Level
                    │                  │           └── Driving Time Warning
                    │                  ├── Display ──┬── 24h Daily
                    │                  │             ├── ! x Events & Faults
                    │                  │             ├── >> Overspeed
                    │                  │             ├── Technical Data
                    │                  │             └── Version Info
                    │                  └── Print ──┬── 24h Daily
                    │                              ├── ! x Events & Faults
                    │                              ├── >> Overspeed
                    │                              ├── Technical Data
                    │                              └── V-graph
                    │
                    ├── Company Menu *3 ── Entry ──┬── VRN Entry *4
                    │                              ├── Activity ign. OFF
                    │                              └── Activity ign. ON
                    │
                    └──→ Service Menu *5
```

Operation of Modes

Operational (Driver and Co-Driver) Mode (Role)

When no card is inserted into the tachograph the mode of operation is still operational mode. However, a driver card must be inserted into the tachograph in order to identify the driver. The driver card is personal and may not be used by anyone else but the rightful card holder.

Inserting driver and co-driver cards

Risk of Accident!

For traffic safety reasons, please do not attempt to insert the driver card(s) while the vehicle is moving!

It is possible to insert the driver card(s) while the vehicle is moving, but this action will be shown on the display and saved as an event to the STC-8250.

➔ *Please refer to "Messages, Warnings and Faults of Operational Mode" on page 45.*

 1. Before starting the trip, the driver must insert his/her driver card (with the chip side up and arrow pointing forward) into to driver card slot (left-hand slot). Push the card into the slot until it is locked in the slot (click sound is heard).

 2. After the card is read from the tachograph; your name, the date and the time of your last card withdrawal will be displayed on the displaye for a moment.

 3. Next, the display shows the addition of manual entry. If so, select **YES** with control keys, press **OK** and follow the manual entry procedure in the following section.

 4. If you do not want to enter activities manually, select **NO** by using control keys and press OK or press backspace ◀ button for shortly.

 5. Subsequently, select the country where your working day begins. Use the control keys to select the country (and region if applicable) codes and press **OK.**

➔ *Please refer to "National / Regional abbreviations and European time zones" on page 118."*

 6. If a co-driver is present, he/she must insert his/her card into the co-driver card slot (right hand slot) and conduct the same procedure. When the co-driver takes over the vehicle, the cards must be exchanged so that the driver card of the person operating the vehicle is always in the left-hand slot.

➜ *Please refer to "Language" on page 103.*

Manual Entries

The activities that are not registered to the cards can be registered next time when the driver insert the driver card into one of the slots.
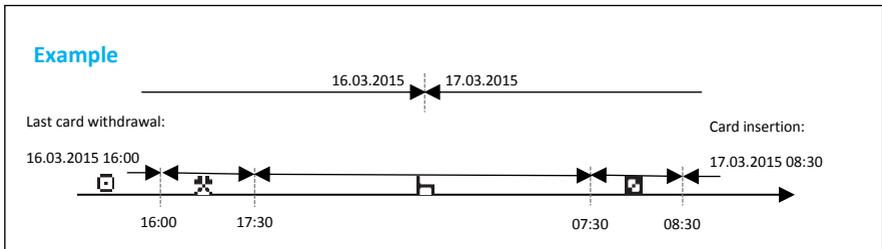
Working with Manual entry

- Select the desired activity (⚒, ◻ ,⊢ or ?), function or numeric value with control keys ◀ / ▶ on the cursor field.
- Confirm the selection with the **OK** button.

Example

16.03.2015 | 17.03.2015

Last card withdrawal:

Card insertion:

16.03.2015 16:00

17.03.2015 08:30

16:00   17:30   07:30   08:30

When you insert the driver card into the driver card slot follow the instructions in order to enter manual entries. For the scenario shown on the above example, to register manual entries do as follows:

1. Insert the driver card into driver slot. Greeting text message shown for approx. 3 seconds. Display also shows the current UTC (06:30) and local times (08:30, time offset = 2 hours).

    ```
    Hoş geldiniz
    08:30    06:30UTC
    ```

2. The driver's last name shown on the display. A progress bar indicates that the driver cars is being read.

    ```
    1 Musterfrau 0
    [================] ⊙
    ```
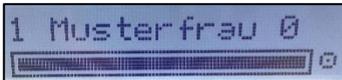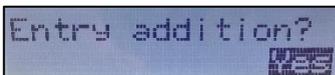
3. Date and time of the last card withdrawal of the driver card is displayed in local time for approximately 3 seconds.

    ```
    Last withdrawal
    16/03/2015 16:00
    ```
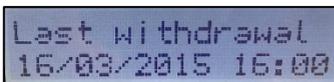
4. Use control keys ◀ / ▶ to select **YES** than press **OK.**

    Note: If you do not want to add any manual entries select **NO** and press **OK.**

    ```
    Entry addition?
                  YES
    ```

5. The following screen shown on the display is the first manual entry input screen. The first line indicates the date & time of card last withdrawal and the second line indicates the date & time of current card insertion.

    ```
    M 16/03/15 16:00
    ▣ 17/03/15 08:30
    ```
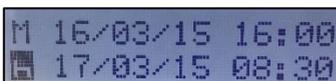
    You can successively enter the logically possible variables in the following order: *"Activity – Day – Month – Year – Hour – Minute".*

    The process ends when the time of insertion-withdrawal operation is reached.

6. The 1st step of the manual entry example (working time from 16:00 to 17:30) is then completed with the following steps. Use control keys ◀ / ▶ to select the activity (e.g. ⚒ – working time) and date & time, then press **OK** to confirm.

    Correct the entries with backspace ◀ button, use control keys ◀ / ▶ to select the desired activity or value, confirm with **OK** after correction and proceed to the next entry field.
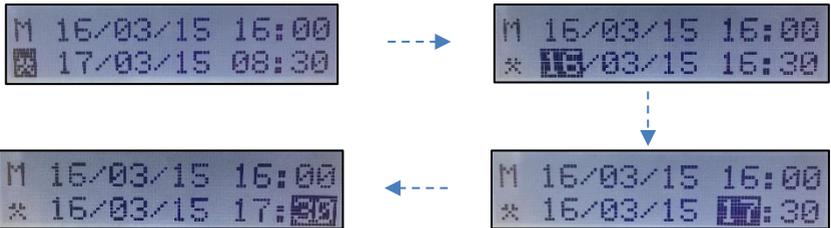
7. The 2nd step of the manual entry example (resting time from 17:30 to 07:30) is then completed with the following steps. Use control keys ◁ / ▷ to select the activity (e.g. ⊢ – resting time) and date & time, then press **OK** to confirm and proceed to the next entry field.
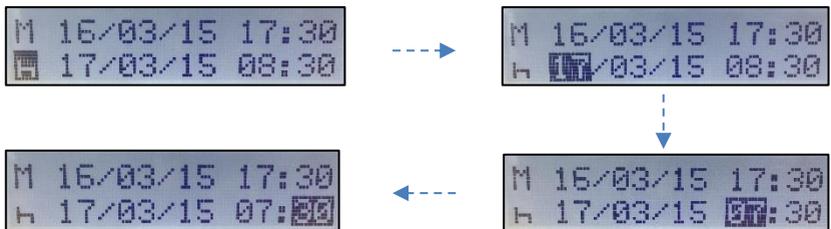
Correct the entries with backspace ◁⏐ button, use control keys ◁ / ▷ to select the desired activity or value, confirm with **OK** after correction and proceed to the next entry field.

8. The 3rd step of the manual entry example (Availability from 07:30 to 08:30) is then completed with the following steps. Use control keys ◁ / ▷ to select the activity (e.g. ▣ – availability) and date & time, then press **OK** to confirm and proceed to the next entry field.

Correct the entries with backspace ◁⏐ button, use control keys ◁ / ▷ to select the desired activity or value, confirm with **OK** after correction and proceed to the next entry field.
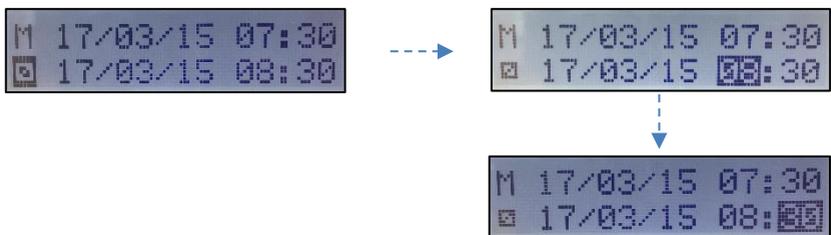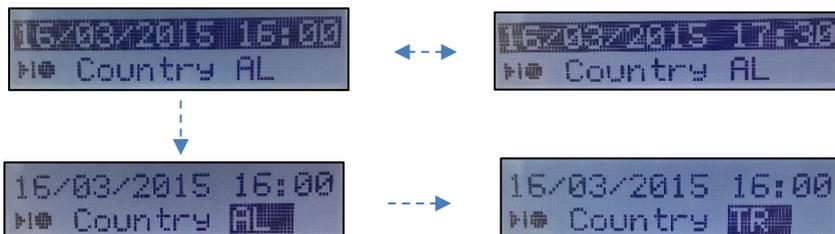
9. Use control keys ◀ / ▶ (select **YES** than press **OK**) to enter end country during the manual entry. If selected **YES,** then continue to manual entry procedure with the following step, otherwise jump to the **step 13** for manual entry confirmation.

10. The following screen shown on the display after selecting **YES** to the previous end place entry question. Select the shift end time by using control keys ◀ / ▶ , then press **OK** button. After the shift selection, end country can be selected by the using control keys ◀ / ▶ , then press **OK** button.

11. Use control keys ◀ / ▶ (select **YES** than press **OK**) to enter begin country during the manual entry. If selected **YES,** then continue to manual entry procedure with the following step, otherwise jump to the step **13** for manual entry confirmation.

12. The following screen shown on the display after selecting **YES** to the previous begin place entry question. Select the shift begin time by using control keys ◀ / ▶ , then press **OK** button. After the shift selection, begin country can be selected by using the control keys ◀ / ▶ , then press **OK** button.
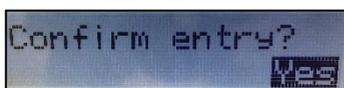

13. Confirm the manual entries with selecting the **YES** by using control keys ◀ / ▶ and press the **OK** button.

It is not possible to change the manual entries after confirmation. If you want to make a correction, please select **NO** and press **OK**. Then, you could start the manual entry procedure from the beginning (**step 5**).

14. After confirmation of the manual entries, the data has been written to the driver cards and card pictogram on the first slot does not blinks. The following default display will be shown. It is seen from the display that mode of operation is operational ( ) mode. Now, it is ready to drive.

```
H🖃        0.0km   H
   0km/h ⊙ 08:40●
```
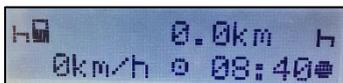
Setting Activities

Available activities are;

🖃 = Driving (Automatically changed while driving the vehicle)

⚒ = Work (while working when the vehicle is stationary, e.g. when loading the vehicle)

▣ = Available (waiting times of the co-driver)

H = Rest (break times and rest periods)

? = Unknown activity (no activity type is recorded, especially used in manual entry)

• Manually setting activities

STOP **Risk of Accident!**
For traffic safety reasons, the activities may be set only if the vehicle is stationary.

1. For the driver 1, press shortly to keypad #1 until the desired activity (⚒, ▣ or H) is displayed.
2. For the driver 2, press shortly to keypad #2 until the desired activity (⚒, ▣ or H) is displayed.

ℹ **Note**
Driving is always selected automatically and cannot be changed manually by the drivers.

- ## **Automatic setting activities**

The tachograph switches to the following activities automatically.

When the vehicle is **moving**:

Driving "⊡" activity is selected for the Driver, and **Availability "▣"** activity is selected for the co-driver.

When the vehicle **stops**:

Work "⚒" activity is selected for the Driver, and **Availability "▣"** activity is selected for the co-driver.

> ⚠️ *Important!*
>
> *At the end of a shift or working day, always set the activity to Rest "⊢" after vehicle stops. Otherwise, the STC-8250 will save working time "▣" for ⚒driver and availability " " for the co-driver!*

- ## **Automatic setting activities after ignition On/Off**

The STC-8250 can be configured to switch to a pre-defined activity (e.g. Rest "⊢") automatically after ignition On/Off. You can change the settings both for ignition On and Off cases for the driver and co-driver.

➔ *Please refer to "Automatic Setting of Activity after Ignition OFF/ON" section, on page 59.*

When the vehicle **stops**:

Work "⚒" activity is selected for the Driver, and **Availability "▣"** activity is selected for the co-driver automatically and display will be as follows:
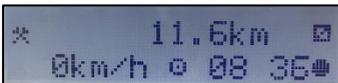
After igniton is **Off**:

The activities can be set automatically to a pre-defined activity (e.g. **Rest** "⊢"). The display shows the activities as shown below.

After igniton is **On** again:

The activities can be set automatically to a pre-defined activity (e.g. **Work "⚒"** and **Availability "☐"**). The display shows the activities as shown below.

```
⚒        11.6km   ☐
  0km/h ☉ 08:40♦
```
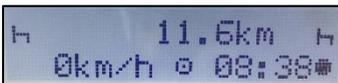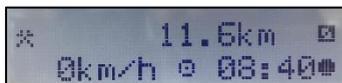
- Change the set activity according to your current task, as necessary.

Begin and End Place

When you start and end your working shift tachograph needs to register both begin place or end place of your trip.

It is possible to enter begin place after card insertion to the slots (during manual entry procedure) or any time during the day. Registering begin place during the manual entry is explained detailly in the "Operational Mode – Working with *Manual entry*" section.

➔ *Please refer to page 33-37 for the visual explanations.*

For the later (after manual entry process) begin place or end place entries during your trip (If you skipped manual entry procedure), follow the following steps.

1. For entering the **Begin Place**:

   Press **OK** to enter Main Menu. Select **Driver menu Entry** by using control ◀ / ▶ keys. Press **OK** and navigate to **Begin Place**. Press **OK** to enter the menu. Select the place and press **OK** to confirm. If region place entry is possible select the region. Press **OK** to confirm.

```
Driver menu              ✦ Entry
✦ Entry       - - - ▶   ▤▶ Begin place
```

```
▤▶ Begin region          ▤▶ Begin country
         AN▨                       E▨
```
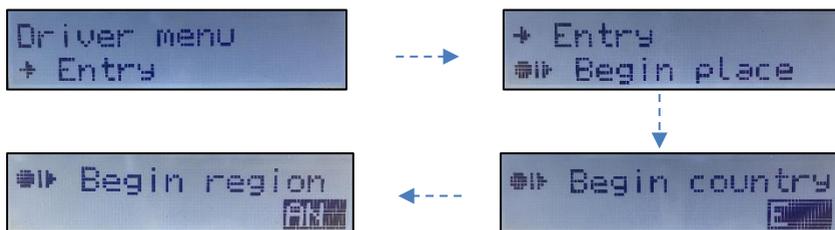
2. For entering the **End Place**:
    Press **OK** to enter Main Menu. Select **Driver menu Entry** by using control ◀ / ▶ keys. Press **OK** and navigate to **End Place**. Press **OK** to enter the menu. Select the place and press **OK** to confirm. If region place entry is possible select the region. Press **OK** to confirm.

```
Driver menu              ✦ Entry
✦ Entry       - - - ▶   ▶▥ End place
```
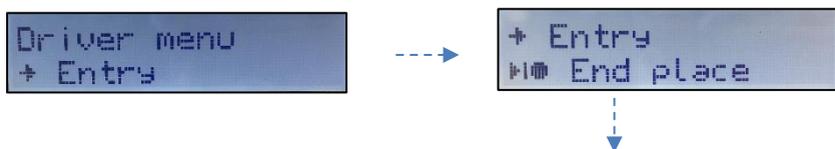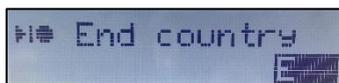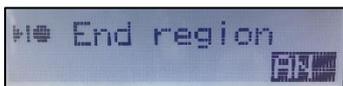
- To register begin or end place for the co-driver, perform the same procedure again but navigate to Co-driver menu not the driver menu.

- It is possible to enter several begin or end places during the trip. STC-8250 records all of the entries unless they are entered on the same minute. If you enter several begin places at the same minute, STC-8250 will register only the last one to that minute. For some countries (e.g. Spain), STC-8250 may require to enter region, please also give the relevant information by means of control keys and acknowledge it by pressing **OK**.

Ferry or Train Condition

When the vehicle is located on a train or on a ferry, entering these special condition times can be registered to the tachograph.

To activate the **ferry/train** condition:

1. Press **OK** to enter Main Menu. Select **Vehicle menu Entry** by using control ◄ / ► keys. Press **OK** and navigate to **Train/Ferry**. As soon as you pressed **OK**, the train/ferry condition is entered. **Entry stored** message displayed. Press the backspace ◄ button several times to return standart display.
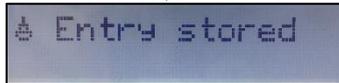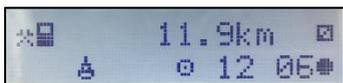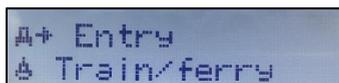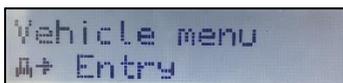
Train/ferry condition ends as soon as the vehicle moves.

➔ *Please refer to "Ferry transfer / Train crossing display explanations" on page 26.*

Out of Scope Condition

Some driving conditions do not require recording of time on the tachograph, for example driving in countries where no such legislation exists. This driving mode is called **Out of Scope**.

To activate the **Out of Scope** condition:

1. Press **OK** to enter Main Menu. Select **Vehicle menu Entry** by using control ◀ / ▶ keys. Press **OK** and navigate to **OUT -> Begin**. As soon as you pressed **OK**, the **Out of Scope Begin** condition is entered. **Entry stored** message displayed. Press the backspace ◀ button several times to return standart display.

```
Vehicle menu          ⏹➔ Entry
⏹➔ Entry              OUT➔ Begin
```

```
OUT       12.1km       OUT➔ Entry
   0km/h ☉ 12 08⏹      stored
```
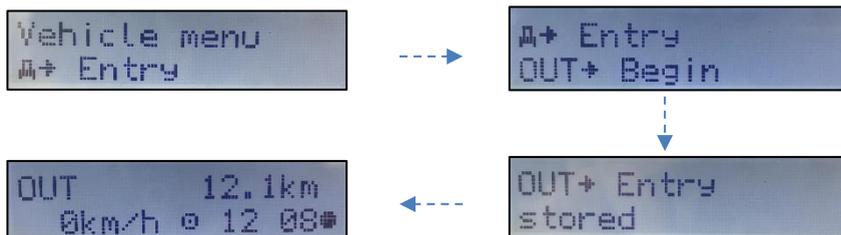
➔ *Please refer to "Out of Scope display explanations" on page 25.*

To de-activate the **Out of Scope** condition:

2. Press **OK** to enter Main Menu. Select **Vehicle menu Entry** by using control ◀ / ▶ keys. Press **OK** and navigate to **->OUT End**. As soon as you pressed **OK**, the **Out of Scope End** condition is entered. **Entry stored** message displayed. Press the backspace ◀ button several times to return standart display.

```
Vehicle menu          ⏹➔ Entry
⏹➔ Entry              ➔OUT End
```

```
✕⏹      12.1km   ⏺     ➔OUT Entry
   0km/h ☉ 12:55⏹      stored
```
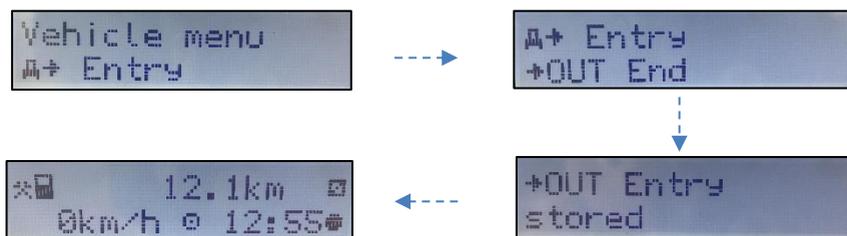
- The **Out of Scope** condition also ends automatically with driver card insertion into card slot or driver card withdrawal from the card slot.

- Exceeding drive time warning messages will not display after 4h15m and 4h30m when the **Out of Scope** condition is activated.

Downloading Driver Card Data

Driver cards hold driver specific information (e.g. driver daily activities, total km driven for each day, vehicles used and etc.) on the driver cards. During normal driving operation, the

driver's Daily activities are saved on the driver card for at least 28 days. When the memory of the card is full, the information will be overwritten by new information and thereby it will be lost forever. To avoid this and to secure card data a frequent download of information is needed. It means that data will be transferred from the card to a data storage outside the vehicle. Data has to be downloaded regularly.

> **Note that!**
>
> *Downloading will not destroy or erased any data of the cards. Data is only erased from cards when it is overwritten by new data or by an accident.*

Tachograph driver cards may be downloaded in two ways.

1. Downloading the driver cards over the tachograph device with data download equipment (sold separately in the market and compliant with the protocol defined in the latest amended legislative document 3821/ 85 Annex-1B, Appendix-7). In this mode, the driver cards should be in the first slot and the mode of the tachograph should be operational mode.

2. Directly download the cards with data download equipments (available on the market). Many types of equipments can download cards directly by inserting them in a card slot on the equipment in question.

To download the driver cards over the STC-8250 is the issue of this document. For the second method, please refer to the data download equipment's user guide.

To explain card download over the STC-8250;

1. Open the silicon cover in front of the tachograph.
2. Connect the download equipment's 6-pin connector to the tachograps's 6-pin interface behind the silicon cover
3. Start downloading data according to the instructions on the download equipment.
4. When downloading starts a flashing animation is played on the second line of the display, showing the downloading is in progress.

5. When the downloading is finished animation on the display stops.
6. Get the digitally signatured data which identifies the driver card and store it in a secure data storage media.

Displaying Card Data

The driver can view his/her inserted driver card information on the display. Both drivers can display their cards' informations under the relevant menus. Driver can view the 24h Daily activities data and the events data related to his/her card.

To perform this, do as follows:

1. Press **OK** to enter Main menu. Select **Driver menu Display** by using control ◀ / ▶ keys. Press **OK** and navigate to **Display 24h Daily**. Press **OK** to enter the menu. Select the date to be displayed and press **OK** to confirm. Select the time format (UTC or Local) to be displayed and press **OK** to confirm. Scroll with control ◀ / ▶ keys to view all of the data. Press the backspace ◀ button several times (press once to return one level back) to return standard display.

2. Press **OK** to enter Main menu. Select **Driver menu Display** by using control ◀ / ▶ keys. Press **OK** and navigate to **Display Events**. Press **OK** to enter the menu. Select the time format (UTC or Local) to be displayed and press **OK** to confirm. Scroll with control

◁ / ▷ keys to view all of the data. Press the backspace ◁| button several times (press once to return one level back) to return standard display.

```
Driver menu          - - - →     ■□ Display
■□ Display                       !×■□ Events
```

```
▼ 19/03/2015 07:     ← - - -     Show date&times
07 (LOC)      6                  in          Local
```
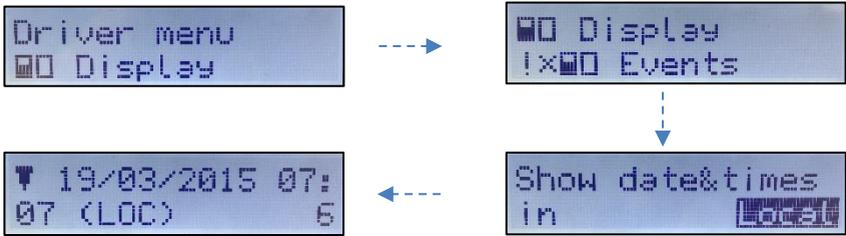
> **Note That!**
>
> *The data appear on the display is similar to how it appears on the printout; however one printout line (24 characters) will be divided into two lines.*

Displaying the co-driver's card information is similar to the driver one, therefore will not be explained again. You can display the co-driver's card information under the co-driver display menu.

Printing Card Data

The driver can print out the data of his/her inserted driver card. Both drivers can print their cards' data under the relevant menus. Driver can print the 24h Daily activities data and the events data related to his/her card.

To perform this, do as follows:

1. Press **OK** to enter Main menu. Select **Driver menu Print** by using control ◁ / ▷ keys. Press **OK** and navigate to **Print 24h Daily**. Press **OK** to enter the menu. Select the date you want to take the printout and press **OK** to confirm. Select the time format (UTC or Local) to be printed and press **OK** to confirm. Printing message appears on the display and meanwhile printing job starts. Press the backspace ◁| button several times (press once to return one level back) to return standard display.

```
Driver menu          - - - →     ■▼ Print
■▼ Print                         24h■▼ Daily
```

```
Show date&times      ← - - -     24h■▼ Daily
in          UTC                            19/03/2015
```
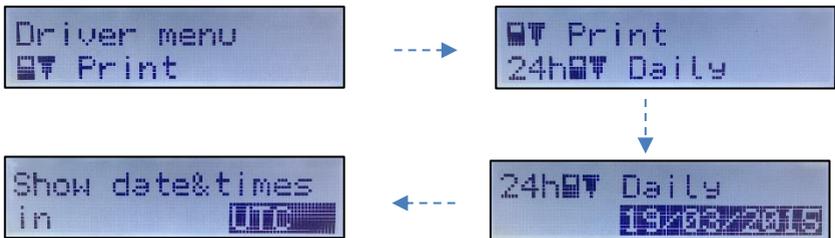
➔ *Please refer to "24h (Daily) Driver Card Printout" explanations given on page 108.*

2. Press **OK** to enter Main menu. Select **Driver menu Print** by using control ◄ / ► keys. Press **OK** and navigate to **Print Events**. Press **OK** to enter the menu. Select the time format (UTC or Local) to be printed and press **OK** to confirm. Printing message appears on the display and meanwhile printing job starts. Press the backspace ◄⊔ button several times (press once to return one level back) to return standard display.
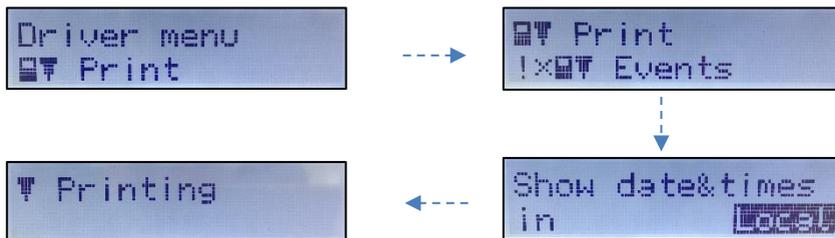
➔ *Please refer to Events & Faults Driver Card Printout explanations given on page 114.*

Printing the co-driver's card data is similar to the driver one, therefore will not be explained again. You can print the co-driver's card data under the co-driver print menu.

Acknowledge Event or Fault messages

When certain events or faults occur, STC-8250 displays a warning messages with an alert tone at the beginning of the warning message. While the warning message appears on the display, plain text of the message will flash about **30 seconds** or until they are confirmed witk **OK** button by the driver. After confirmation with **OK** button or 30 seconds timeout the flashing of the text message will stop immediately. Press **OK** button again to acknowledge the message then the message disappears and the standard display will appear again.

Messages, Warnings and Faults of Operational Mode

There are four types of messages that can be shown on the display.

- **Messages –** gives information on the process or remind the driver. Messages can not be stored and printed. Press the backspace ◄⊔ button or **OK** button to clear the message.
- **Pre-warnings –** appears as early reminders to the warnings. Pre-warnings are not stored and can not be printed. Press **OK** button twice to clear the Pre-warning.
- **Warnings (Events) –** appear in the event of e.g. overspeed or violation of the law or if the tachograph can not be recording. Warnings are stored and can be printed. Press **OK** button twice to acknowledge the Warning.
- **Faults –** are more critical to than warnings and are displayed if there is a fault detected in the tachograph, in the sensor or cards. On the other hand, faults message are shown if the device has detect a tampering. Faults are stored and can be printed. Press **OK** button twice to acknowledge the Fault.

Displayed Messages	Explanation	User Action
"Preparing"	Appears after the printing or displaying functions are called from the related vehicle or driver menus. Means that relevant data is preparing by the tachograph.	No user action required.
"Printing"	Appears when the printer is busy with printing.	No user action required.
"Stop to print"	Appears when the vehicle moves while the printing is busy with printing.	Stop the vehicle and try to print again when the vehicle is stationary.
"No paper"	Displayed when the printer is out of paper at the beginning of the print job.	Load new roll of paper to the printer drawer.
"Load Paper"	Displayed when the printer is out of paper.	Load new roll of paper to the printer drawer.
"Printer is ready"	Displayed after the new roll of paper is loaded to the printer drawer.	No user action required.
"Cancel Printing"	Displayed when the printer is not loaded with a new roll of paper in a certain period.	Press **YES** to cancel the printing job.
"Thermal stress"	Displayed if the printer has continuously printed and the printer head is too hot to continue.	Wait for the printer head is cool down and printer continues printing job or Press backspace to cancel the job. Please do not touch the printer head with your hand when this message appears.
"Not possible"	Displayed when the user trying to enter the menu while the vehicle is moving.	Stop the vehicle if necessary to navigate in the menus.
"Entry stored"	Displayed if the user input is stored by the tachograph.	No user action required.
"UTC corr. not possible"	Displayed if you are trying to correct the UTC time which has already been corrected within the last 7 days.	No user action required.
"Ejection not possible"	Displayed if the cards inserted to the tachograph slots are requested while the vehicle is moving.	Please stop the vehicle and then request the card withdrawal from the tachograph.

"Wrong card type 134"	Displayed if the inserted card into the tachograph is not a tachograph card. The card inserted is not accepted and ejected automatically.	Please insert a valid tachograph card.
"Non valid card 1"	A non-valid or expired card has been inserted to one of the slots.	Acknowledge the message. Eject the non-valid or expired card if it is not ejected automatically.

Displayed Pre-warnings	Explanation	User Action
⊢1 04h15 Give a break!	This message displayed after continuous driving time of 4 hour 15 minutes, which means 15 minutes left to exceed the continuous driving time (4 ½ hours)	Acknowledge the message. Find a suitable place to rest in 15 minutes.
⊢1 04h30 Give a break!	This message displayed after continous driving time of 4 ½ hours is exceeded.	Acknowledge the message. Find a suitable place and give rest break now.
⟩⟩ Overspeed pre-warning	The vehicle is exceeding the overspeed limit which is set for that vehicle. If exceeding continues 30 sec. (or pre-defined value) the overspeed event will be recorded to tachograph memory.	Acknowledge the message. Reduce vehicle speed.
24⊢ Daily rest control	This message is displayed to remind the driver that maximum daily driving time is reached.	Acknowledge the message. Take a rest break.
|⊢ Weekly rest control	This message is displayed to remind the driver that maximum weekly driving time is reached.	Acknowledge the message. Take a rest break.

`Card will expire soon 130`	Means warning expiration day limit of card inserted to the tachograph slot is exceeded and this card will be expired soon.	Contact the responsible authority to get new one.
`Service pre-warning 131`	Means warning calibration expiration limit of the tachograph is exceeded. If the tachograph is activated.	Have the STC-8250 checked and calibrated by authorized workshop.
`Time for service 132`	Remaining calibration time of the tachograph is finished.	Have the STC-8250 checked and calibrated by authorized workshop.
`Battery is low 61`	Displayed if the battery level is decreased to below threshold level after the installation phase.	Acknowledge the message. Have the STC-8250 checked by authorized workshop to replace the battery.

Displayed Warnings (Events)	Explanation	User Action
`! 🔒 Security breach 43`	Displayed because of PNOR flash data storage recycle banned.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
`! 🔒 Security breach 71`	Displayed because the tachograph is not personalized.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
`! 🔒 Security breach 77`	Displayed because of security features removed.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.

!🔒 `Motion sensor auth. failure 17`	Displayed if the tachograph does not authenticate with the motion sensor	Acknowledge the message. Have the STC-8250 checked by authorized workshop.
!🔒 `Card auth. failure 18`	Displayed if the tachograph does not authenticate with the smart card.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.
!🔒 `Unauthorized change of MS 19`	Displayed if unpaired motion sensor is linked to the tachograph paired with another motion sensor.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.
!🔒 `Card data integ. err. 20`	Smart card data is corrupted.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.
!🔒 `Data integ. err. 21`	The tachograph data is corrupted.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.
!🔒 `Auth. failure 33`	Displayed when error related to authentication occurs in the motion sensor.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
!🔒 `Data integ. err. 34`	Displayed when error related to nonvolatile memory occurs in the motion sensor.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
!🔒 `Hardware Sabotage 24`	Card(s) has been ejected by force has been detected.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.
!🔒 `Hardware Sabotage 37`	Displayed when error related to sensor element or temperature occurs in the motion sensor and the tachograph is not in calibration mode.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.

!⊹ Power supply interruption 8	The power supplied to the STC-8250 is below or above the limit for the proper operation or has been disconnected for more than 200 miliseconds. The event is not triggered in Calibration Mode.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.
!◧ Driving w/o valid card 4	Driving started with an inappropriate card or with an inappropriate card combination.	Acknowledge the message. Stop vehicle and insert a valid driver card or remove inappropriate card from co-driver slot.
!◨◧Card insertion while driving 5	A driver card was inserted after driving has begun.	Acknowledge the message. No further action required.
!◔◔Time overlap 3	The Last withdrawal date/time of the inserted driver card from previous tachograph is later than the date/time of this tachograph.	Acknowledge the message. Check the date/time of the tachographs used and determine the tachograph with the incorrect UTC time, make the tachograph time to be corrected by authorized workshop. Or, wait for the overlap period to be elapsed.
!◨◨Card conflict 2	The two tachograph cards incompatible with each other must be inserted to the tachograph.	Acknowledge the message. Remove one of the cards (which is useless) from the card slot.
!◨ᴀCard closed incorrectly 6	Card was not removed properly from the last tachograph or data could not be saved to the card correctly.	Acknowledge the message. No further action required.
❯❯ Overspeed 7	Driver exceeded the permissible max speed limit for longer than 1 minutes.	Acknowledge the message. Reduce vehicle speed.

Displayed Faults	Explanation	User Action
! �Ⅱ Motion sensor data error 9	The data link failure occurred between the motion sensor and the tachograph.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.
﹗ᴫ Vehicle motion conflict 10	Displayed if the second source of motion data (GPS or CAN-Bus) is not consistent with the primarily used motion sensor data.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.

Displayed Faults	Explanation	User Action
✗ ⊟ Internal fault 1	Displayed because of the tachograph internal fatal error.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✗ ⊟ Internal fault 2	Displayed because system time reaches end. (2099)	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✗ ⊟ Internal fault 4	Displayed because the security processor is inaccessible.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✗ ⊟ Internal fault 5	Displayed because the system memory is inaccessible.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✗ ⊟ Internal fault 31	Displayed because the smart card reader power up voltage is an invalid.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✗ ⊟ Internal fault 32	Displayed because the smart card reader protocol is unsupported.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.

✕ 🖩 `Internal fault 33`	Displayed because of smart card in invalid slot.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✕ 🖩 `Internal fault 34`	Displayed because of smart card unexpected value.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✕ 🖩 `Internal fault 41`	Displayed because of data storage insufficent.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✕ 🖩 `Internal fault 44`	Displayed because of Pnor flash data access error.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✕ 🖩 `Internal fault 72`	Displayed because of security processor integrity fault.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✕ 🖩 `Internal fault 73`	Displayed because of omap integrity fault.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✕ 🖩 `Internal fault 74`	Displayed because of security data integrity error.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✕ 🖨 `Printer fault 50`	Printer's supply voltage is failed or printer head is defective.	Acknowledge the message. Repeat print request and if necessary switch off / on the ignition.
✕ ▢ `Display fault 51`	Displayed while in the built-in-test (display test) if the display is not working properly.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.

x ↧ `Downloading` `   fault 52`	Displayed if the downloading process has been interrupted	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
x ⫼ `Sensor` `   fault 53`	Displayed when error related to controller ram or controller instruction or communication occurs in the motion sensor.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
x ▯1 `No further` `   details 64` x ▯2 `No further` `   details 64`	Displayed because of generic smart card fault.	Acknowledge the message. Check if the card contact surface is clean. If it is not, clean the contacts and insert it again.
! ▯ `  No further` `  details 16`	Displayed because of generic tachograph error.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.
! ▯ `  No further` `  detailss 32`	Displayed because of generic sensor error.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.

Acoustic Alerts

STC-8250 generates acoustic alerts (beep tone) to warn user about some warning situations (events) or irrelevant user entries. Acoustic alerts can be heard on these events:

1. Overspeed,
2. Irrelevant user entries,

Withdrawing driver card and co-driver cards

At the end of the work shift / day or when driver and co-driver change places the cards will be ejected from the tachograph.

In order to withdraw (eject) driver or co-driver cards, do as follows:

1. Be sure that the vehicle is stopped (not moving).
2. Enter the desired activities at the end of the work shift, (e.g **Rest** "⊢") by using the keypad**#1** or keypad**#2**.

3. After setting the latest activities, **press *longly*** to keypad**#1** or keypad**#2** for ejection of the driver and co-driver cards, respectively.

4. Drivers's last name appears as shown below. Progrees bar in the second line indicates that STC-8250 is transferring data to the driver/co-driver card.
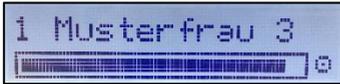
5. Select your end country by using control ◁ / ▷ and press **OK**. If required, select the end region and confirm by pressing **OK**.
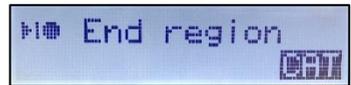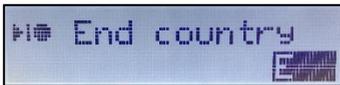
If you do not want to enter end place, you can abort the end place entry by pressing the backspace ◁ button.

6. Card(s) will be ejected from the slot it is required. Take the card(s) and keep it in a secure environment.

7. After the driver card(s) is released, display turns back to standard display as below.
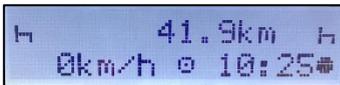
> **Risk of Accident!**
>
> - *You must withdraw the driver and co-driver cards from the card slots when the vehicle is stationary. Otherwise, the STC-8250 will not eject the cards with displaying an "Ejection is not possible" message.*
>
> - *Ejection is also not possible when the data on the card is being processed.*

Driver/vehicle change during operation

When the crew exchange their positions, withdraw driver and co-driver cards from the related slots and exchange them by inserting into the other card slots. Co-driver (now driver) should first insert his/her driver card into card slot 1 and driver (now co-driver) should insert his/her driver card into card slot 2. Set the activity you wish.

When the driver or co-driver who leaves the current vehicle should request his/her card and takes his/her card out from the STC-8250. New vehicle crew (driver or co-driver) should insert their new driver or co-driver cards into the related card slots.

Power saving mode

When the ignition key is switched OFF the STC-8250 will turn to power saving mode to preserve the vehicle's battery. The STC-8250 will turn to power saving mode in app. 10 seconds after the last interaction. Firstly, the display light will switches OFF in 3 seconds. After approximately 13 seconds the display turns OFF and STC-8250 will enter to the sleep mode to reduce the power consumption.

The display will turn ON again when:

- Switching the ignition key ON,
- Pressing any button once (turns back to power safe mode again when no activity),
- Inserting or withdrawing any cards into/from card slots (turns back to power safe mode again after cards data is being processed by STC-8250),
- When the vehicle is moving (e.g by tow).

Company Mode (Role)

This part of the documentation contains information especially for the vehicle owners and transport companies who have certain responsibilities such as:

1. Company Inspection,
2. Workshop Inspection.

Company Inspection

The company is obligated to carry out inspections of the tachographs and has to keep records.

The company inspection shall ensure that:

- Type approval numberon the tachograph is correct.
- Tachograph's UTC time is accurate by less than 20 minutes.
- The tachograph is within the correct calibration interval.
- The installation plaque is time valid and not broken.
- The tamper label is not torn apart.
- The stored calibration parameters agree with what is recorded on the installation plaque.

- The tachograph's internally stored vehicle paramaters such as VIN (Vehicle Identification Number) and VRN (Vehicle Registration Number)
- The tachograph does not have any visual damage.

The company has to keep a record of inspection.

Workshop Inspection

The company has to administrate a workshop inspection of the tachographs and store records from the inspection. It is the company's responsibility to renew this inspection within every two years. The installation plaque, which is fixed near the tachograph, indicates the validity dates of the inspection.

> ⚠️ *Note that!*
>
> *Next time when the tachograph is at the inspection, the installation plaque must be valid and not broken.*

Functions of the company card

The company cards identify the company and register it into the STC-8250, when the first time the company card is inserted. Therefore, acces rights to to the data assigned to the company will be ensured.

> ⚠️ *The company has to take care of the correct use of the company card(s).*

By inserting the company card, you can gain the following capabilities.

1. Registeration and de-registration of the company,
2. Entering vehicle registration number,
3. Download and access to mass storage of vehicle,
4. Download and access to card data,
5. Display and print out of the driver card and vehicle data.

> ⚠️ *The company card is designed for the data management of the company only and must not be used for driving! If the company card is used for driving, a warning message will be displayed and recorded as an event to the STC-8250.*

Registration of the Company (Lock-in)

The company owners can registrate (lock-in) itself to the tachograph by inserting their company cards in order to protect data of the tachograph from unauthorized persons. Before the tachograph is being used, it should be Lock-in to the company otherwise all data which is unlocked until Lock-in is available to everyone.

In order to Lock-in your tachograph to your company, perform the steps below:

1. Insert your company card (chip side is up and arrow pointing forward) into one of the card slots of the STC-8250. Make sure that the other slot has driver cards only or no cards inside.

2. Greeting text message shown for approx. 3 seconds. Display also shows the current UTC (03:41) and local times (05:41, time offset = 2 hours).

```
Welcome
05:41    03:41UTC
```

3. The Company's name shown on the display. A progress bar indicates that the company card is being read.

```
1 Company 15
▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓▓ ☼
```

4. If the company card is inserted the first time, the company will automatically be Lock-in the STC-8250. "Company lock set" message appears on the display as shown below.
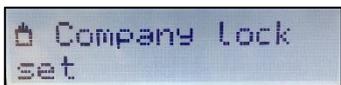
```
🔒 Company lock
set
```

5. If the inserted company card already has an active lock, the following message appears on the display.

```
🔒 Company lock
already set
```
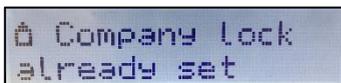
6. After company card is being read, the following default screen will be displayed showing the company mode is active.

```
⚒🔲      41.9km   ☑
   0km/h 🔒 05:31✦
```

7. Withdraw the company card from which slot it is inserted. Then, select **YES** to the question (Keep company lock) and press **OK** to perform the lock-in.

Keep company
Lock?   YES

8. "Company lock set" message appears on the display as shown below.

🖰 Company Lock
set
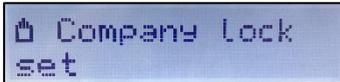
Entering Vehicle Registration Number

If the Vehicle Registration Number (VRN) field of a new tachograph is not entered in the workshops it can be entered only once in Company Mode.

To do so, perform the following steps:

1. Make sure that the STC-8250 is in Company mode (Company card is inserted).
2. Press **OK** to enter Main Menu. Select **Company menu Enter VRN** by using control ◄ / ► keys and press **OK** to enter the menu.

Company menu
🖰 Enter VRN
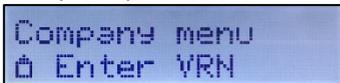
3. The following display will be shown as below.

RMS:│AUT│ CP: 1
????????????? ✦

4. Select RMS (Registering Member State) by using control ◄ / ► keys and press **OK.**

➔ *Please refer to "National/Regional abbr. and European time zones", on page 106.*

RMS:│TR│ CP: 1
????????????? ✦

5. Select CP (Code Page) by using control ◄ / ► keys and press **OK.** Code Page brings different alphabet sets to enter the VRN.

RMS:TR CP:│1│
????????????? ✦

6. Use control ◀ / ▶ keys to select the desired character and confirm your selection with **OK** button. After pressing **OK** button pass to the next character and select and confirm with **OK**. Repeat process until the final "**?**" character is cleared with a text or space. When it is ready to confirm, the diamond symbol at the end of the second line should become carriage return symbol. Press **OK** button to confirm the whole VRN entry.

When you need a correction use backspace ◀ button and delete your entry and after selecting desired character repeat the above steps.

After confirmation of VRN with **OK** button, display shown above will be closed and VRN Entry menu (under the Vehicle Menu) will disappear.

> *If you want, print a technical data under the Vehicle Menu Print, and check that the VRN entered above written on the printout.*

Automatic Setting of Activity after Ignition OFF/ON

The STC-8250 can be configured to switch to a pre-defined activity (e.g." ⊢ , ⚒ , ☐ ") automatically after ignition On/Off. You can change the settings both for ignition OFF and ON cases for the driver and co-driver. These settings can be adjusted when the STC-8250 is in the Company Mode or in the Calibration Mode.

Ignition OFF Activities for Drivers

To adjust the Ignition OFF activities in Company Mode;

1. Insert your company card into one of the card slots. Make sure that the other slot has the driver cards or no card is inserted (STC-8250 is in Company Mode).
2. Press **OK** to enter Main Menu. Select Company Menu by using control ◀ / ▶ keys. Press **OK** to enter the menu. Select **Act. ignition off** menu by using the control ◀ / ▶ keys. Press **OK** to enter the menu. Adjust the activities that you desired to change automatically when the ignition off.

For example: Rest "⊢" activities are selected both for the Driver and co-driver. When the ignition becomes off, the activities of driver and co-driver will both change to pre-defined activity (Rest "⊢") automatically and display will be as follows:

Igniton ON Activities for Drivers

To adjust the Ignition ON activities in Company Mode;

1. Insert your company card into one of the card slots. Make sure that the other slot has the driver cards or no card is inserted (STC-8250 is in Company Mode).
2. Press **OK** to enter Main Menu. Select Company Menu by using control ◀ / ▶ keys. Press **OK** to enter the menu. Select **Act. ignition on** menu by using the control ◀ / ▶ keys. Press **OK** to enter the menu. Adjust the activities that you desired to change automatically when the ignition on.

```
Driver:▨
Co-driver:▨
```

After igniton is **On** again:

The activities can be set automatically to a pre-defined activity (e.g. **Work "⚒"** and **Availability "▨"**). The display shows the activities as shown below.

```
⚒       11.6km    ▨
  0km/h ⊙ 08:40▪
```
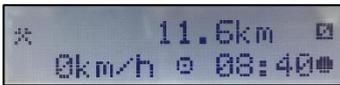
• Change the set activity according to your current task, as necessary.

Downloading Mass Storage (Vehicle Data)

Tachograph data memory records and holds the relevant data (e.g. driver and co-driver activities, country entries for both drivers, special entries, recording control activities, recordings of time adjustments, Lock-in / Lock-out procedures by the company card, identification of the STC-8250, device calibrations, system events & faults data, installation data and speed informations over 168 hours and etc.) over a time period of at least 365 calender days. When the memory of the tachograph is full, the information will be overwritten by new information and thereby it will be lost forever. To avoid this and to secure vehicle data, a frequent download of information is needed. It means that data will be transferred from the tachograph to data storage outside the vehicle. Data has to be downloaded regularly.

Tachograph mass storage may be downloaded in the following modes:

1. **Company Mode:** In this mode company card should be in one of the card slots. Driver card or no cards should be in the other slot. If the company is locked-in to the tachograph only that company who has locked can access to stored data (card insertion/withdrawals, driver activities and places) in company mode. With using different company cards, one can not access (display, print or download) to these data which is previously locked by another company.

2. **Calibration Mode:** In this mode workshop card should be in one of the card slots. Driver card or no cards should be in the other slot. If the company card is locked-in to the tachograph, workshop cards can not access (display, print or download) to stored data (card insertion/withdrawals, driver activities and places) which is previously locked by any company.

3. **Control Mode:** In this mode control card should be in one of the card slots. Driver card or no cards should be in the other slot. Whether it is locked by any company or not, control cards can access (display, print or download) to whole stored data (card insertion/withdrawals, driver activities and places) which is previously locked by any company.

> **Note That!**
>
> *Downloading of mass storage data of the tachograph requires data download equipment (sold separately in the market and compliant with the protocol defined in the latest amended legislative document 3821/85 Annex-1B Appendix-7).*

To explain mass storage download of the STC-8250, perform the following steps:

1. Open the silicon cover in front of the tachograph.
2. Connect the download equipment's 6-pin connector to the tachograps's 6-pin interface behind the silicon cover.
3. Start downloading data according to the instructions on the download equipment.
4. When downloading starts a flashing animation is played on the second line of the display, showing the downloading is in progress.

5. When the downloading is finished animation on the display stops.
6. Get the digitally signatured data which identifies the digital tachograph and store it in a secure data storage media.

Downloading Card Data

Downloading procedure of driver card data in company mode is similar to the procedure explained in the operational mode; therefore, will not be explained again.

➔ Please *refer to "Operational mode – Downloading Driver Card Data" part on page 41.*

Displaying and printing driver card and vehicle data

Displaying and printing driver card and vehicle data procedure in company mode is similar to the procedure explained in the operational mode and in the control mode and will not be explained again.

➔ *Please refer to "Operational mode – Displaying and Printing Card Data" part on page 43-44 and "Control mode – Displaying and Printing Vehicle Data" part on page 72-75.*

De-registration of the Company (Lock-out)

The company owners can de-registrate (lock-out) itself from the tachograph by withdrawing their company cards from the tachograph or by inserting different company card to the tachograph which is previously locked-in by another company card. The company lock will be removed automatically when you insert a different company card. Before the tachograph is being used by another company (e.g, when you sell your vehicle), it should be locked-out from the previous company otherwise next company's data will be recorded (appended) to the previous company's data.

In order to Lock-out your tachograph from your company, perform the steps below:

1. Insert the same company card (if it has not been inserted already) into one of the card slots of the STC-8250. Make sure that the other slot has driver cards only or no cards inside.

2. Greeting text message shown for approx. 3 seconds. Display also shows the current UTC (03:41) and local times (05:41, time offset = 2 hours).

```
Welcome
05:41    03:41UTC
```

3. The Company's name shown on the display. A progress bar indicates that the company card is being read.

```
1 Company 15
▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮ 0
```

4. If the inserted company card already has an active lock, the following message appears on the display.

```
🔒 Company lock
already set
```
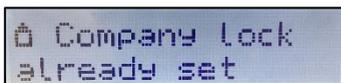
5. After company card is being read, the following default screen will be displayed showing the company mode is active.

```
✕▪        41.9km   ▫
   0km/h 🔒 05:31✦
```

6. Withdraw the company card from the slot it is inserted. Then, select **NO** to the question (Keep company lock) and press **OK** to perform the lock-out. If you do not press the **OK** button in 10 seconds, the desired choice will be saved.

```
Keep company
Lock?        No
```
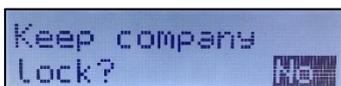
7. "Company lock removed" message appears on the display as shown below.
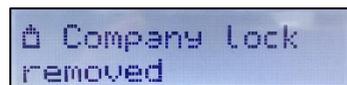
```
🔒 Company lock
removed
```

Acknowledge Event or Fault messages

When certain events or faults occur, STC-8250 displays a warning messages with an alert tone at the beginning of the warning message. While the warning message appears on the display, plain text of the message will flash about **30 seconds** or until they are confirmed with **OK** button by the driver. After confirmation with **OK** button or 30 seconds timeout the flashing of the text message will stop immediately. Press **OK** button again to acknowledge the message then the message disappears and the standard display will appear again.

Messages, Warnings and Faults of Company Mode/Role

There are four types of messages that can be shown on the display.

- **Messages –** gives information on the process or remind the driver. Messages can not be stored and printed. Press the backspace ◁ button or **OK** button to clear the message.
- **Pre-warnings –** appears as early reminders to the warnings. Pre-warnings are not stored and can not be printed. Press **OK** button twice to clear the Pre-warning.
- **Warnings (Events) –** appear in the event of e.g. overspeed or violation of the law or if the tachograph can not be recording. Warnings are stored and can be printed. Press **OK** button twice to acknowledge the Warning.
- **Faults –** are more critical to than warnings and are displayed if there is a fault detected in the tachograph, in the sensor or cards. On the other hand, faults message are shown if the device has detect a tampering. Faults are stored and can be printed. Press **OK** button twice to acknowledge the Fault.

Displayed Messages	Explanation	User Action
"Preparing"	Appears after the printing or displaying functions are called from the related vehicle or driver menus. Means that relevant data is preparing by the tachograph.	No user action required.
"Printing"	Appears when the printer is busy with printing.	No user action required.
"Stop to print"	Appears when the vehicle moves while the printing is busy with printing.	Stop the vehicle and try to print again when the vehicle is stationary.
"No paper"	Displayed when the printer is out of paper at the beginning of the print job.	Load new roll of paper to the printer drawer.
"Load Paper"	Displayed when the printer is out of paper.	Load new roll of paper to the printer drawer.
"Printer is ready"	Displayed after the new roll of paper is loaded to the printer drawer.	No user action required.

"Cancel Printing"	Displayed when the printer is not loaded with a new roll of paper in a certain period.	Press **YES** to cancel the printing job.
"Thermal stress"	Displayed if the printer has continuously printed and the printer head is too hot to continue.	Wait for the printer head is cool down and printer continues printing job or Press backspace to cancel the job. Please do not touch the printer head with your hand when this message appears.
"Not possible"	Displayed when the user trying to enter the menu while the vehicle is moving.	Stop the vehicle if necessary to navigate in the menus.
"Entry stored"	Displayed if the user input is stored by the tachograph.	No user action required.
"UTC corr. not possible"	Displayed if you are trying to correct the UTC time which has already been corrected within the last 7 days.	No user action required.
"Ejection not possible"	Displayed if the cards inserted to the tachograph slots are requested while the vehicle is moving.	Please stop the vehicle and then request the card withdrawal from the tachograph.
"Wrong card type 134"	Displayed if the inserted card into the tachograph is not a tachograph card. The card inserted is not accepted and ejected automatically.	Please insert a valid tachograph card.
"Non valid card 1"	A non-valid or expired card has been inserted to one of the slots.	Acknowledge the message. Eject the non-valid or expired card if it is not ejected automatically.

Displayed Pre-warnings	Explanation	User Action
⊢1 04h15 Give a break!	This message displayed after continuous driving time of 4 hour 15 minutes, which means 15 minutes left to exceed the continuous driving time (4 ½ hours)	Acknowledge the message. Find a suitable place to rest in 15 minutes.
⊢1 04h30 Give a break!	This message displayed after continous driving time of 4 ½ hours is exceeded.	Acknowledge the message. Find a suitable place and give rest break now.
≫ Overspeed pre-warning	The vehicle is exceeding the overspeed limit which is set for that vehicle. If exceeding continues 30 sec. (or pre-defined value) the overspeed event will be recorded to tachograph memory.	Acknowledge the message. Reduce vehicle speed.
24⊢ Daily rest control	This message is displayed to remind the driver that maximum daily driving time is reached.	Acknowledge the message. Take a rest break.
⎮⊢ Weekly rest control	This message is displayed to remind the driver that maximum weekly driving time is reached.	Acknowledge the message. Take a rest break.
Card will expire soon 130	Means warning expiration day limit of card inserted to the tachograph slot is exceeded and this card will be expired soon.	Contact the responsible authority to get new one.
Service pre-warning 131	Means warning calibration expiration limit of the tachograph is exceeded. If the tachograph is activated.	Have the STC-8250 checked and calibrated by authorized workshop.
Time for service 132	Remaining calibration time of the tachograph is finished.	Have the STC-8250 checked and calibrated by authorized workshop.
Battery is low 61	Displayed if the battery level is decreased to below threshold level after the installation phase.	Acknowledge the message. Have the STC-8250 checked by authorized workshop to replace the battery.

Displayed Warnings (Events)	Explanation	User Action
!🔒 Security breach 43	Displayed because of PNOR flash data storage recycle banned.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
!🔒 Security breach 71	Displayed because the tachograph is not personalized.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
!🔒 Security breach 77	Displayed because of security features removed.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
!🔒 Motion sensor auth. failure 17	Displayed if the tachograph does not authenticate with the motion sensor	Acknowledge the message. Have the STC-8250 checked by authorized workshop.
!🔒 Card auth. failure 18	Displayed if the tachograph does not authenticate with the smart card.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.
!🔒 Unauthorized change of MS 19	Displayed if unpaired motion sensor is linked to the tachograph paired with another motion sensor.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.
!🔒 Card data integ. err. 20	Smart card data is corrupted.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.
!🔒 Data integ. err. 21	The tachograph data is corrupted.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.

`!🔒 Auth. failure 33`	Displayed when error related to authentication occurs in the motion sensor.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
`!🔒 Data integ. err. 34`	Displayed when error related to nonvolatile memory occurs in the motion sensor.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
`!🔒 Hardware Sabotage 24`	Card(s) has been ejected by force has been detected.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.
`!🔒 Hardware Sabotage 37`	Displayed when error related to sensor element or temperature occurs in the motion sensor and the tachograph is not in calibration mode.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
`!✝ Power supply interruption 8`	The power supplied to the STC-8250 is below or above the limit for the proper operation or has been disconnected for more than 200 miliseconds. The event is not triggered in Calibration Mode.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.
`!🔟 Driving w/o valid card 4`	Driving started with an inappropriate card or with an inappropriate card combination.	Acknowledge the message. Stop vehicle and insert a valid driver card or remove inappropriate card from co-driver slot.
`!◻◻Card insertion while driving 5`	A driver card was inserted after driving has begun.	Acknowledge the message. No further action required.

`! ⛁⛁Time overlap 3`	The Last withdrawal date/time of the inserted driver card from previous tachograph is later than the date/time of this tachograph.	Acknowledge the message. Check the date/time of the tachographs used and determine the tachograph with the incorrect UTC time, make the tachograph time to be corrected by authorized workshop. Or, wait for the overlap period to be elapsed.
`! ⛃⛃Card conflict 2`	The two tachograph cards incompatible with each other must be inserted to the tachograph.	Acknowledge the message. Remove one of the cards (which is useless) from the card slot.
`! ⛃⛁Card closed incorrectly 6`	Card was not removed properly from the last tachograph or data could not be saved to the card correctly.	Acknowledge the message. No further action required.
`⟩⟩ Overspeed 7`	Driver exceeded the permissible max speed limit for longer than 1 minutes.	Acknowledge the message. Reduce vehicle speed.
`! ⛢ Motion sensor data error 9`	The data link failure occurred between the motion sensor and the tachograph.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.
`⛢⛢ Vehicle motion conflict 10`	Displayed if the second source of motion data (GPS or CAN-Bus) is not consistent with the primarily used motion sensor data.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.

Displayed Faults	Explanation	User Action
`X ⛁ Internal fault 1`	Displayed because of the tachograph internal fatal error.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.

✖ ▉ `Internal fault 2`	Displayed because system time reaches end. (2099)	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✖ ▉ `Internal fault 4`	Displayed because the security processor is inaccessible.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✖ ▉ `Internal fault 5`	Displayed because the system memory is inaccessible.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✖ ▉ `Internal fault 31`	Displayed because the smart card reader power up voltage is an invalid.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✖ ▉ `Internal fault 32`	Displayed because the smart card reader protocol is unsupported.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✖ ▉ `Internal fault 33`	Displayed because of smart card in invalid slot.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✖ ▉ `Internal fault 34`	Displayed because of smart card unexpected value.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✖ ▉ `Internal fault 41`	Displayed because of data storage insufficent.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✖ ▉ `Internal fault 44`	Displayed because of Pnor flash data access error.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.

✕ ⊟ Internal fault 72	Displayed because of security processor integrity fault.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✕ ⊟ Internal fault 73	Displayed because of omap integrity fault.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✕ ⊟ Internal fault 74	Displayed because of security data integrity error.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✕ ▼ Printer fault 50	Printer's supply voltage is failed or printer head is defective.	Acknowledge the message. Repeat print request and if necessary switch off / on the ignition.
✕ ◻Display fault 51	Displayed while in the built-in-test (display test) if the display is not working properly.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.
✕ ⤓ Downloading fault 52	Displayed if the downloading process has been interrupted	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✕ Ⅱ Sensor fault 53	Displayed when error related to controller ram or controller instruction or communication occurs in the motion sensor.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.

✕ ⊟1 No further
    details 64
✕ ⊟2 No further
    details 64
	Displayed because of generic smart card fault.	Acknowledge the message. Check if the card contact surface is clean. If it is not, clean the contacts and insert it again.

! ⊟ No further details 16	Displayed because of generic tachograph error.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.

`!🗍 No further` `   details 32`	Displayed because of generic sensor error.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.

Acoustic Alerts

STC-8250 generates acoustic alerts (beep tone) to warn user about some warning situations (events) or irrelevant user entries. Acoustic alerts can be heard on these events:

1. Overspeed,
2. Irrelevant user entries,

Control Mode (Controller Role)

Inserting a control card into one of the card slots changes the mode of operation of the tachograph to CONTROL Mode. However, make sure that the other slot has the driver cards or no card is inserted. A valid control card is required to display, to print or to download driving data stored on either an inserted driver card or in the tachographs data memory. The control card provides read-access to the entire tachograph data memory contents whether or not the data has been company locked using a valid company card.

Displaying Stored and Card Data

With a valid control card, enforcement authorities can view inserted driver card data and stored data on the display. In this scenario, the driver card should be in the first slot and the control card should be in the second slot. Controller can view the 24h daily activities and the events data related to the driver card inserted to the first slot. In addition to this, the controller can also view the stored 24h daily activities, events & faults, overspeed and technical data of the vehicle.

On the operational mode (driver part) card display is explained detailly, therefore will not be explained again. Here, displaying of the vehicle data will be demonstrated.

To perform this, do as follows:

1. **Display Vehicle Daily Data:** Press **OK** to enter Main menu. Select **Vehicle menu Display** by using control ◀ / ▶ keys. Press **OK** and navigate to **Display 24h Daily**. Press **OK** to enter the menu. Select the date to be displayed and press **OK** to confirm. Select the time format (UTC or Local) to be displayed and press **OK** to confirm. Scroll with control ◀ / ▶ keys to view all of the data. Press the backspace ◀ button several times (press once to return one level back) to return standard display.

Vehicle menu A□ Display	---→	A□ Display 24hA□ Daily

		↓
		24hA□ Daily 19/03/2015

♛ 19/03/2015 09: 41 (UTC) 1	←---	Show date&times in UTC
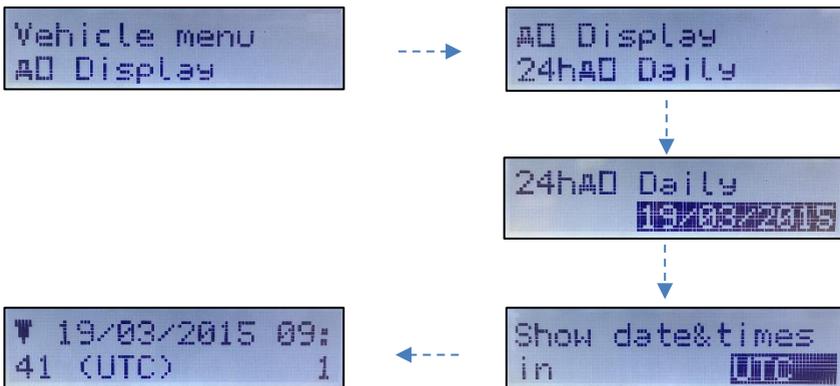
2. **Display Vehicle Events&Faults Data:** Press **OK** to enter Main menu. Select **Vehicle menu Display** by using control ◁ / ▷ keys. Press **OK** and navigate to **Display Events**. Press **OK** to enter the menu. Select the time format (UTC or Local) to be displayed and press **OK** to confirm. Scroll with control ◁ / ▷ keys to view all of the data. Press the backspace ◁ button several times (press once to return one level back) to return standard display.

Vehicle menu A□ Display	---→	A□ Display !xA□ Events

♛ 19/03/2015 09: 41 (UTC) 1	←---	Show date&times in UTC
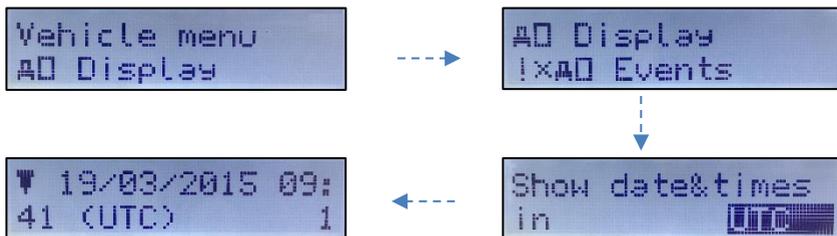
3. **Display Vehicle Overspeed Data:** Press **OK** to enter Main menu. Select **Vehicle menu Display** by using control ◁ / ▷ keys. Press **OK** and navigate to **Display Overspeed**. Press **OK** to enter the menu. Select the time format (UTC or Local) to be displayed and press **OK** to confirm. Scroll with control ◁ / ▷ keys to view all of the data. Press the backspace ◁ button several times (press once to return one level back) to return standard display.

Vehicle menu A□ Display	---→	A□ Display >>□ Overspeed

♛ 19/03/2015 09: 41 (UTC) 1	←---	Show date&times in UTC

4. **Display Vehicle Technical Data:** Press **OK** to enter Main menu. Select **Vehicle menu Display** by using control ◀ / ▶ keys. Press **OK** and navigate to **Display Technical data**. Press **OK** to enter the menu. Select the time format (UTC or Local) to be displayed and press **OK** to confirm. Scroll with control ◀ / ▶ keys to view all of the data. Press the backspace ◀ button several times (press once to return one level back) to return standard display.
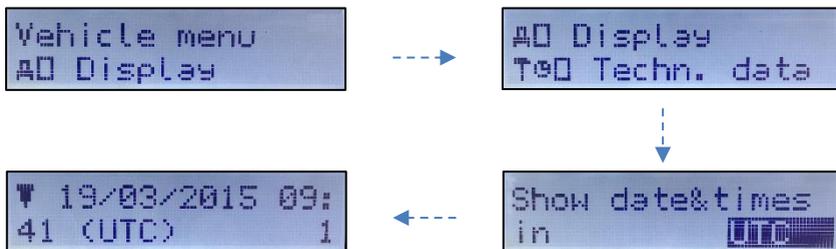
- The data appear on the display is similar to how it appears on a printout; however one printout line (24 characters) will be divided into two lines.

Printing Stored Data

Controller can print the 24h daily activities and the events data related to the driver card inserted to the first slot. In addition to this, the controller can also print the stored 24h daily activities, events & faults, overspeed, technical data and v-graph of the vehicle.

On the operational mode (driver part) printout of the card related data is explained detailly, therefore will not be explained again.

➔ *Please refer to "Operational mode – Printing Card data" on page 44.*

Here, printing of the vehicle data will be demonstrated.

To perform this, do as follows:
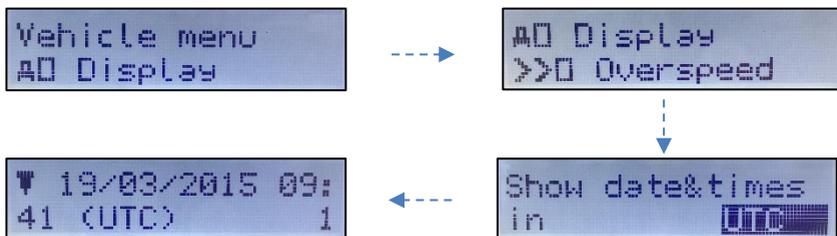
1. **Print Vehicle Daily Data:** Press **OK** to enter Main menu. Select **Vehicle menu Print** by using control ◀ / ▶ keys. Press **OK** and navigate to **Print 24h Daily**. Press **OK** to enter the menu. Select the date you want to take the printout and press **OK** to confirm. Select the time format (UTC or Local) to be printed and press **OK** to confirm. Printing message appears on the display and meanwhile printing job starts. Press the backspace ◀ button several times (press once to return one level back) to return standard display.
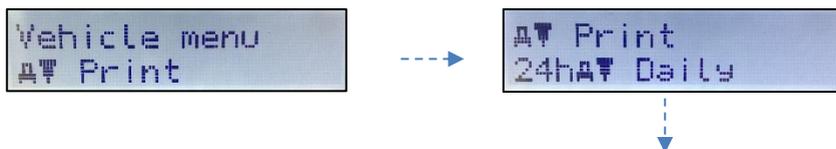
➔ *Please refer to "24h (Daily) Vehicle Unit Printout" explanations given on page 109.*

2. **Print Vehicle Events&Faults Data:** Press **OK** to enter Main menu. Select **Vehicle menu Print** by using control ◄ / ► keys. Press **OK** and navigate to **Print Events**. Press **OK** to enter the menu. Select the time format (UTC or Local) to be printed and press **OK** to confirm. Printing message appears on the display and meanwhile printing job starts. Press the backspace ◄ button several times (press once to return one level back) to return standard display.

➔ *Please refer to the "Events & Faults Vehicle Unit Printout" explanations given on page 111-112.*

3. **Print Vehicle Overspeed Data:** Press **OK** to enter Main menu. Select **Vehicle menu Print** by using control ◄ / ► keys. Press **OK** and navigate to **Print Overspeed**. Press **OK** to enter the menu. Select the time format (UTC or Local) to be printed and press **OK** to confirm. Printing message appears on the display and meanwhile printing job starts. Press the backspace ◄ button several times (press once to return one level back) to return standard display.
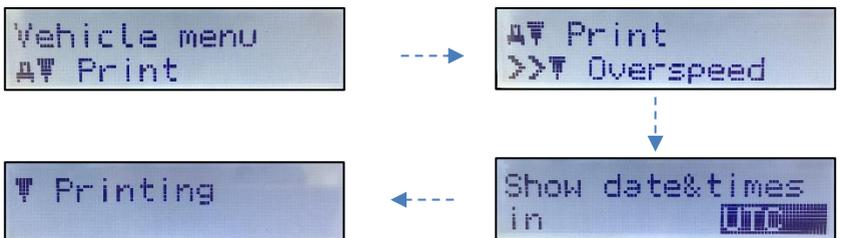
➔ *Please refer to "Vehicle Overspeed Printout" explanations given on page 115.*

4. **Print Vehicle Technical Data:** Press **OK** to enter Main menu. Select **Vehicle menu Print** by using control ◄ / ► keys. Press **OK** and navigate to **Print Technical Data**. Press **OK** to enter the menu. Select the time format (UTC or Local) to be printed and press **OK** to confirm. Printing message appears on the display and meanwhile printing job starts.

Press the backspace ◁ button several times (press once to return one level back) to return standard display.

```
Vehicle menu          - - - ►    ₳▼ Print
₳▼ Print                          T◉▼ Techn. data
                                       |
                                       ▼
▼ Printing            ◄ - - -      Show date&times
                                   in        UTC
```
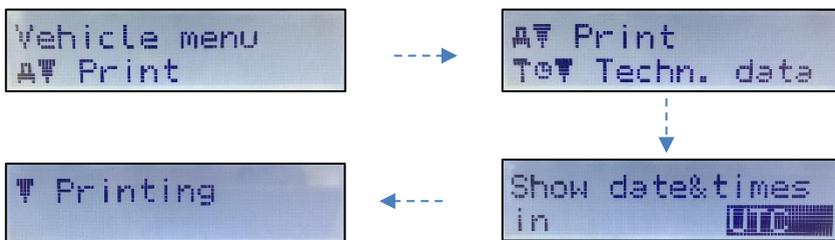
➔ *Please refer to "Vehicle Technical Data Printout" explanations given on page 116.*

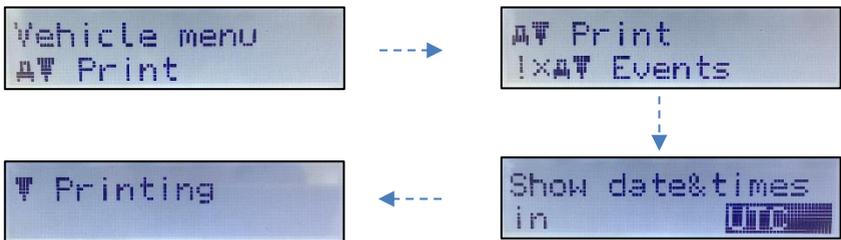5. **Print Vehicle V-graph:** Press **OK** to enter Main menu. Select **Vehicle menu Print** by using control ◁ / ▷ keys. Press **OK** and navigate to **Print V-graph**. Press **OK** to enter the menu. Select the time format (UTC or Local) to be printed and press **OK** to confirm. Printing message appears on the display and meanwhile printing job starts. Press the backspace ◁ button several times (press once to return one level back) to return standard display.

```
Vehicle menu          - - - ►    ₳▼ Print
₳▼ Print                          V◫▼ V-graph
                                       |
                                       ▼
▼ Printing            ◄ - - -      Show date&times
                                   in        UTC
```
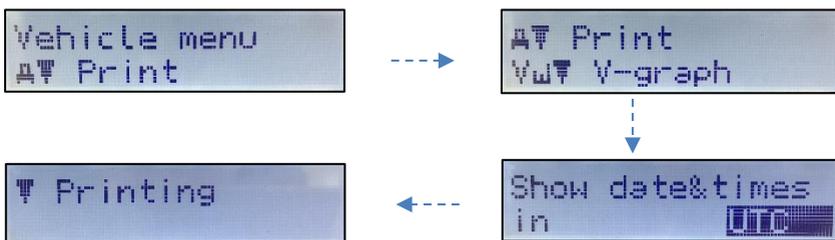
Downloading Vehicle Stored and Card Data

In control mode, control card should be in one of the card slots. Driver card or no cards should be in the other slot. Whether tachograph is locked by other company or not, control cards can access (display, print or download) to complete stored data (card insertion/withdrawals, driver activities and places) which is previously locked by any company.

Downloading procedure of vehicle stored data and card stored data in control mode is similar to the procedure that is explained in the company mode and operational mode, therefore will not be explained again.

➔ *Please refer to "Company mode – Downloading Mass Storage (Vehicle Data)" part on page 60 and "Operational mode – Downloading Driver Card Data" on page 41.*

Acknowledge Event or Fault messages

When certain events or faults occur, STC-8250 displays a warning messages with an alert tone at the beginning of the warning message. While the warning message appears on the display, plain text of the message will flash about **30 seconds** or until they are confirmed witk **OK** button by the driver. After confirmation with **OK** button or 30 seconds timeout the flashing of the text message will stop immediately. Press **OK** button again to acknowledge the message then the message disappears and the standard display will appear again.

Messages, Warnings and Faults of Control Mode/Role

There are four types of messages that can be shown on the display.

- **Messages –** gives information on the process or remind the driver. Messages can not be stored and printed. Press the backspace ◁ button or **OK** button to clear the message.
- **Pre-warnings –** appears as early reminders to the warnings. Pre-warnings are not stored and can not be printed. Press **OK** button twice to clear the Pre-warning.
- **Warnings (Events) –** appear in the event of e.g. overspeed or violation of the law or if the tachograph can not be recording. Warnings are stored and can be printed. Press **OK** button twice to acknowledge the Warning.
- **Faults –** are more critical to than warnings and are displayed if there is a fault detected in the tachograph, in the sensor or cards. On the other hand, faults message are shown if the device has detect a tampering. Faults are stored and can be printed. Press **OK** button twice to acknowledge the Fault.

Displayed Messages	Explanation	User Action
"Preparing"	Appears after the printing or displaying functions are called from the related vehicle or driver menus. Means that relevant data is preparing by the tachograph.	No user action required.
"Printing"	Appears when the printer is busy with printing.	No user action required.
"Stop to print"	Appears when the vehicle moves while the printing is busy with printing.	Stop the vehicle and try to print again when the vehicle is stationary.
"No paper"	Displayed when the printer is out of paper at the beginning of the print job.	Load new roll of paper to the printer drawer.
"Load Paper"	Displayed when the printer is out of paper.	Load new roll of paper to the printer drawer.
"Printer is ready"	Displayed after the new roll of paper is loaded to the printer drawer.	No user action required.

"Cancel Printing"	Displayed when the printer is not loaded with a new roll of paper in a certain period.	Press **YES** to cancel the printing job.
"Thermal stress"	Displayed if the printer has continuously printed and the printer head is too hot to continue.	Wait for the printer head is cool down and printer continues printing job or Press backspace to cancel the job. Please do not touch the printer head with your hand when this message appears.
"Not possible"	Displayed when the user trying to enter the menu while the vehicle is moving.	Stop the vehicle if necessary to navigate in the menus.
"Entry stored"	Displayed if the user input is stored by the tachograph.	No user action required.
"UTC corr. not possible"	Displayed if you are trying to correct the UTC time which has already been corrected within the last 7 days.	No user action required.
"Ejection not possible"	Displayed if the cards inserted to the tachograph slots are requested while the vehicle is moving.	Please stop the vehicle and then request the card withdrawal from the tachograph.
"Wrong card type 134"	Displayed if the inserted card into the tachograph is not a tachograph card. The card inserted is not accepted and ejected automatically.	Please insert a valid tachograph card.
"Non valid card 1"	A non-valid or expired card has been inserted to one of the slots.	Acknowledge the message. Eject the non-valid or expired card if it is not ejected automatically.

Displayed Warnings (Events)	Explanation	User Action
!🔒 `Security breach 43`	Displayed because of PNOR flash data storage recycle banned.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
!🔒 `Security breach 71`	Displayed because the tachograph is not personalized.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
!🔒 `Security breach 77`	Displayed because of security features removed.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
!🔒 `Motion sensor auth. failure 17`	Displayed if the tachograph does not authenticate with the motion sensor	Acknowledge the message. Have the STC-8250 checked by authorized workshop.
!🔒 `Card auth. failure 18`	Displayed if the tachograph does not authenticate with the smart card.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.
!🔒 `Unauthorized change of MS 19`	Displayed if unpaired motion sensor is linked to the tachograph paired with another motion sensor.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.
!🔒 `Card data integ. err. 20`	Smart card data is corrupted.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.
!🔒 `Data integ. err. 21`	The tachograph data is corrupted.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.

`!` `🔒` `Auth.` `failure 33`	Displayed when error related to authentication occurs in the motion sensor.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
`!` `🔒` `Data integ.` `err. 34`	Displayed when error related to nonvolatile memory occurs in the motion sensor.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
`!` `🔒` `Hardware` `Sabotage 24`	Card(s) has been ejected by force has been detected.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.
`!` `🔒` `Hardware` `Sabotage 37`	Displayed when error related to sensor element or temperature occurs in the motion sensor and the tachograph is not in calibration mode.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.

`!` `⊥` `Power`
`supply`
 	
`interruption 8`
	The power supplied to the STC-8250 is below or above the limit for the proper operation or has been disconnected for more than 200 miliseconds. The event is not triggered in Calibration Mode.	Acknowledge the message.
		Have the STC-8250 checked by authorized workshop.

`!` `▣` `Driving w/o` `valid card 4`	Driving started with an inappropriate card or with an inappropriate card combination.	Acknowledge the message. Stop vehicle and insert a valid driver card or remove inappropriate card from co-driver slot.

`!` `▣▣` `Card`
`insertion`
`while`
`driving 5`
	A driver card was inserted after driving has begun.	Acknowledge the message. No further action required.

`! ⏰⏰Time overlap` `    3`	The Last withdrawal date/time of the inserted driver card from previous tachograph is later than the date/time of this tachograph.	Acknowledge the message. Check the date/time of the tachographs used and determine the tachograph with the incorrect UTC time, make the tachograph time to be corrected by authorized workshop. Or, wait for the overlap period to be elapsed.
`! ▪▪Card` `    conflict 2`	The two tachograph cards incompatible with each other must be inserted to the tachograph.	Acknowledge the message. Remove one of the cards (which is useless) from the card slot.

`! ▪▪Card closed`
`    incorrectly`
`    6`
	Card was not removed properly from the last tachograph or data could not be saved to the card correctly.	Acknowledge the message. No further action required.

`≫ Overspeed 7`	Driver exceeded the permissible max speed limit for longer than 1 minutes.	Acknowledge the message. Reduce vehicle speed.

`! ♪ Motion`
`    sensor data`
`    error 9`
	The data link failure occurred between the motion sensor and the tachograph.	Acknowledge the message.
		Have the STC-8250 checked by authorized workshop.

`!▪♪ Vehicle`
`    motion`
`    conflict 10`
	Displayed if the second source of motion data (GPS or CAN-Bus) is not consistent with the primarily used motion sensor data.	Acknowledge the message.
		Have the STC-8250 checked by authorized workshop.

Displayed Faults	Explanation	User Action
✕ ⬛ `Internal fault 1`	Displayed because of the tachograph internal fatal error.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✕ ⬛ `Internal fault 2`	Displayed because system time reaches end. (2099)	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✕ ⬛ `Internal fault 4`	Displayed because the security processor is inaccessible.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✕ ⬛ `Internal fault 5`	Displayed because the system memory is inaccessible.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✕ ⬛ `Internal fault 31`	Displayed because the smart card reader power up voltage is an invalid.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✕ ⬛ `Internal fault 32`	Displayed because the smart card reader protocol is unsupported.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✕ ⬛ `Internal fault 33`	Displayed because of smart card in invalid slot.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✕ ⬛ `Internal fault 34`	Displayed because of smart card unexpected value.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.

✕ ⊟ `Internal` `   fault 41`	Displayed because of data storage insufficent.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✕ ⊟ `Internal` `   fault 44`	Displayed because of Pnor flash data access error.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✕ ⊟ `Internal` `   fault 72`	Displayed because of security processor integrity fault.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✕ ⊟ `Internal` `   fault 73`	Displayed because of omap integrity fault.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✕ ⊟ `Internal` `   fault 74`	Displayed because of security data integrity error.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✕ ⊤ `Printer` `   fault 50`	Printer's supply voltage is failed or printer head is defective.	Acknowledge the message. Repeat print request and if necessary switch off / on the ignition.
✕ ▢`Display` `   fault 51`	Displayed while in the built-in-test (display test) if the display is not working properly.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.
✕ ⤓ `Downloading` `   fault 52`	Displayed if the downloading process has been interrupted	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✕ ⫴ `Sensor` `   fault 53`	Displayed when error related to controller ram or controller instruction or communication occurs in the motion sensor.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.

x█1 No further details 64 x█2 No further details 64	Displayed because of generic smart card fault.	Acknowledge the message. Check if the card contact surface is clean. If it is not, clean the contacts and insert it again.
!█ No further details 16	Displayed because of generic tachograph error.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.
!█ No further details 32	Displayed because of generic sensor error.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.

Acoustic Alerts

STC-8250 generates acoustic alerts (beep tone) to warn user about some warning situations (events) or irrelevant user entries. Acoustic alerts can be heard on these events:

1. Overspeed,
2. Irrelevant user entries,

Calibration Mode (Workshop Role)

By inserting a workshop card and entering the respective PIN, the STC-8250 digital tachograph enters the CALIBRATION mode. This section is a brief description of the CALIBRATION mode and its access rights gained on this mode.

> **Note That!**
>
> *Please refer to the "*Workshop (Preparational) Manual of the STC-8250*" for further information.*

By entering the Calibration Mode, the user has gained access rights to Service Menu, which is located under the Main menu.

PIN Entering

After insertion of a valid workshop card into one of the slots, the STC-8250 request the entry of the respective PIN. The PIN may be 4 to 8 characters long and may consist of numbers (0-9), upper-case letters (A-Z), lower case letters (a-z) or special characters (@#$).

To enter the PIN,

1. Select the desired character by using control keys control ◄ / ► keys. Then press **OK** to assign the character. After assigning the cursor moves to the next character and previously assigned character will be shown as "*". Repeat this procedure until the all charaecters in the PIN is entered. After 4 character is entered, the carriage return symbol appears. Press **OK** to confirm the PIN or if it is more then 4 characters continue on selecting the desired characters by using control ◄ / ► keys.
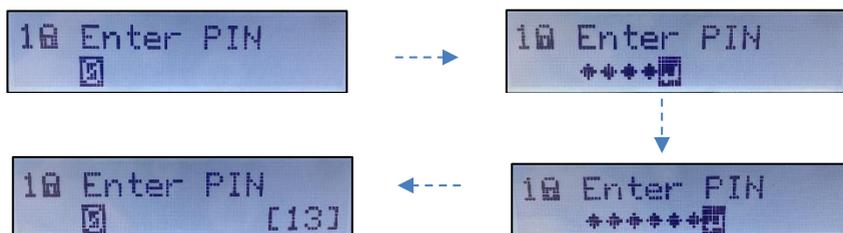
2. To correct the entered character, use backspace ◄ key to move back to previous cursor. The entered character becames visible and select the desired character as described above. Press **OK** until the cursor stops on the carriage return symbol. Pressing **OK** again on the carriage return symbol confirms the whole PIN entry. The card will be read and the PIN will be checked.

3. If PIN entry is not validated, the PIN entry procedure starts again from beginning showing the number of remaining attempts.

Calibration

Vehicle specific parameters will be programmed into the STC-8250 data memory in the calibration procedure. Vehicle parameters include vehicle identification (VIN, VRN and Registering Member State) and vehicle characteristics (w, k, l, tyre size, speed limiting, device setting (if applicable), current UTC time, current odometer value). The front 6-Pin interface is used for calibration purposes in the Calibration Mode.

➔ The calibration procedure is explained detailly in the STC-8250 Workshop (preparational) Manual. Please refer to that document for more explanations.

> *Calibration of the STC-8250 digital tachograph requires calibration equipment (sold separately in the market and compliant with the protocol defined in the latest amended legislative document 3821/85 Annex-1B, Appendix-8).*

Built-in Test

By entering the Calibration Mode, the user has gained access rights to Service Menu, which is located under the Main menu. Under the Service Menu, a test menu exists. Workshop staff can perform some built-in tests (e.g, backlight test, dead pixel test, keypad test, printing test, buzzer test, battery level test, data integrity test, card reader test and data download tests) by using this functionality of the STC-8250.

Test Drive

Workshop cards can be used like driver cards for test driving purposes besides their usual workshop (calibration and test) purposes. In that case, make sure that the workshop card is inserted to the driver slot. The same entries are required as for a driver card while insertion (manual entries) or withdrawal (end place entry) of the workshop cards.

Displaying Vehicle Stored and Card Data

Displaying procedure of vehicle stored data and card stored data in workshop mode is similar to the procedure that is explained in the control mode, therefore will not be explained again.

➔ *Please refer to "Control mode - Displaying Stored and Card Data" part on page 72.*

Printing Vehicle Stored and Card Data

Printing procedure of vehicle stored data and card stored data in workshop mode is similar to the procedure that is explained in the control mode, therefore will not be explained again.

➔ *Please refer to "Control mode – Printing Stored Data" part on page 74.*

Downloading Vehicle Stored and Card Data

Downloading procedure of vehicle stored data and card stored data in workshop mode is similar to the procedure that is explained in the company mode, therefore will not be explained again.

➔ *Please refer to "Company mode – Downloading Mass Storage (Vehicle Data)" part on page 60.*

Messages, Warnings and Faults of Calibration Mode

There are four types of messages that can be shown on the display.

- **Messages –** gives information on the process or remind the driver. Messages can not be stored and printed. Press the backspace ◀❚ button or **OK** button to clear the message.
- **Pre-warnings –** appears as early reminders to the warnings. Pre-warnings are not stored and can not be printed. Press **OK** button twice to clear the Pre-warning.

- **Warnings (Events) –** appear in the event of e.g. overspeed or violation of the law or if the tachograph can not be recording. Warnings are stored and can be printed. Press **OK** button twice to acknowledge the Warning.
- **Faults –** are more critical to than warnings and are displayed if there is a fault detected in the tachograph, in the sensor or cards. On the other hand, faults message are shown if the device has detect a tampering. Faults are stored and can be printed. Press **OK** button twice to acknowledge the Fault.

Displayed Messages	Explanation	User Action
"Preparing"	Appears after the printing or displaying functions are called from the related vehicle or driver menus. Means that relevant data is preparing by the tachograph.	No user action required.
"Printing"	Appears when the printer is busy with printing.	No user action required.
"Stop to print"	Appears when the vehicle moves while the printing is busy with printing.	Stop the vehicle and try to print again when the vehicle is stationary.
"No paper"	Displayed when the printer is out of paper at the beginning of the print job.	Load new roll of paper to the printer drawer.
"Load Paper"	Displayed when the printer is out of paper.	Load new roll of paper to the printer drawer.
"Printer is ready"	Displayed after the new roll of paper is loaded to the printer drawer.	No user action required.
"Cancel Printing"	Displayed when the printer is not loaded with a new roll of paper in a certain period.	Press **YES** to cancel the printing job.
"Thermal stress"	Displayed if the printer has continuously printed and the printer head is too hot to continue.	Wait for the printer head is cool down and printer continues printing job or Press backspace to cancel the job. Please do not touch the printer head with your hand when this message appears.
"Not possible"	Displayed when the user trying to enter the menu while the vehicle is moving.	Stop the vehicle if necessary to navigate in the menus.
"Entry stored"	Displayed if the user input is stored by the tachograph.	No user action required.

`"UTC corr. not possible"`	Displayed if you are trying to correct the UTC time which has already been corrected within the last 7 days.	No user action required.
`"Ejection not possible"`	Displayed if the cards inserted to the tachograph slots are requested while the vehicle is moving.	Please stop the vehicle and then request the card withdrawal from the tachograph.
`"Wrong card type 134"`	Displayed if the inserted card into the tachograph is not a tachograph card. The card inserted is not accepted and ejected automatically.	Please insert a valid tachograph card.
`"PIN is blocked 135"`	Displayed when workshop card is blocked because of wrong card pin entries.	Acknowledge the message.
`"Non valid card 1"`	A non-valid or expired card has been inserted to one of the slots.	Acknowledge the message. Eject the non-valid or expired card if it is not ejected automatically.
`"Upgrade failed 144"`	Displayed when software upgrade is failed.	Acknowledge the message.
`"Upgrade successful"`	Displayed when software upgrade is successful.	Acknowledge the message.
`"Insert a service card 145"`	Displayed when a card other than Workshop card is inserted to non-activated VU.	Acknowledge the message and insert a workshop card.
`"Insert a service card 149"`	Displayed when software upgrade is tried with no Workshop card inserted.	Acknowledge the message and insert a workshop card.

Displayed Pre-warnings	Explanation	User Action
⊢1 `04h15 Give a break!`	This message displayed after continuous driving time of 4 hour 15 minutes, which means 15 minutes left to exceed the continuous driving time (4 ½ hours)	Acknowledge the message. Find a suitable place to rest in 15 minutes.

⊢1 04h30 Give a break!	This message displayed after continous driving time of 4 ½ hours is exceeded.	Acknowledge the message. Find a suitable place and give rest break now.
⟫ Overspeed pre-warning	The vehicle is exceeding the overspeed limit which is set for that vehicle. If exceeding continues 30 sec. (or pre-defined value) the overspeed event will be recorded to tachograph memory.	Acknowledge the message. Reduce vehicle speed.
24⊢ Daily rest control	This message is displayed to remind the driver that maximum daily driving time is reached.	Acknowledge the message. Take a rest break.
|⊢ Weekly rest control	This message is displayed to remind the driver that maximum weekly driving time is reached.	Acknowledge the message. Take a rest break.
Card will expire soon 130	Means warning expiration day limit of card inserted to the tachograph slot is exceeded and this card will be expired soon.	Contact the responsible authority to get new one.
Service pre- warning 131	Means warning calibration expiration limit of the tachograph is exceeded. If the tachograph is activated.	Have the STC-8250 checked and calibrated by authorized workshop.
Time for service 132	Remaining calibration time of the tachograph is finished.	Have the STC-8250 checked and calibrated by authorized workshop.
Battery is low 61	Displayed if the battery level is decreased to below threshold level after the installation phase.	Acknowledge the message. Have the STC-8250 checked by authorized workshop to replace the battery.

Displayed Warnings (Events)	Explanation	User Action
! 🔒 Security breach 71	Displayed because the tachograph is not personalized.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
! 🔒 Security breach 77	Displayed because of security features removed.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
! 🔒 Hardware Sabotage 24	Card(s) has been ejected by force has been detected.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.
! ⬆ Power supply interruption 8	The power supplied to the STC-8250 is below or above the limit for the proper operation or has been disconnected for more than 200 miliseconds. The event is not triggered in Calibration Mode.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.
! 🔲 Driving w/o valid card 4	Driving started with an inappropriate card or with an inappropriate card combination.	Acknowledge the message. Stop vehicle and insert a valid driver card or remove inappropriate card from co-driver slot.
! 🔲Card insertion while driving 5	A driver card was inserted after driving has begun.	Acknowledge the message. No further action required.

`!` `Time overlap 3`	The Last withdrawal date/time of the inserted driver card from previous tachograph is later than the date/time of this tachograph.	Acknowledge the message. Check the date/time of the tachographs used and determine the tachograph with the incorrect UTC time, make the tachograph time to be corrected by authorized workshop. Or, wait for the overlap period to be elapsed.
`!` `Card conflict 2`	The two tachograph cards incompatible with each other must be inserted to the tachograph.	Acknowledge the message. Remove one of the cards (which is useless) from the card slot.
`!` `Card closed incorrectly 6`	Card was not removed properly from the last tachograph or data could not be saved to the card correctly.	Acknowledge the message. No further action required.
`>>` `Overspeed 7`	Driver exceeded the permissible max speed limit for longer than 1 minutes.	Acknowledge the message. Reduce vehicle speed.
`!` `Motion sensor data error 9`	The data link failure occurred between the motion sensor and the tachograph.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.
`!` `Vehicle motion conflict 10`	Displayed if the second source of motion data (GPS or CAN-Bus) is not consistent with the primarily used motion sensor data.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.

Displayed Faults	Explanation	User Action
✕ ▯ Internal Fault 41	Displayed because of data storage insufficient.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✕ ▯1 No further details 64 ✕ ▯2 No further details 64	Displayed because of generic smart card fault.	Acknowledge the message. Check if the card contact surface is clean. If it is not, clean the contacts and insert it again.

Acoustic Alerts

STC-8250 generates acoustic alerts (beep tone) to warn user about some warning situations (events) or irrelevant user entries. Acoustic alerts can be heard on these events:

1. Overspeed,
2. Irrelevant user entries,

Unknown Equipment

Unknown equipment refers to a tachograph card or a motion sensor, which can't be authenticated when inserted into the VU.

If a tachograph card is not authenticated after inserted into the VU, STC-8250 automatically ejects the card after five authentication attempts and the VU user becomes UNKNOWN.

In such cases the user needs to apply to card issuing authority for the card renewal at www.staum.org.tr.

The messages, warnings and faults of unknown equipment are the same as unknown role.

Motion Sensor

Motion sensor is a part of the recording equipment, providing a signal represenrative of vehicle speed and/or distance travelled. A motion sensor possesses valid credentials for its authentication and their validity is verifiable. If the motion sensor is not authenticated to the VU, the paring process can not be completed successfully. In this situation, the connected motion sensor, if not paired with vehicle unit, will fail for the subsequent authentication checks resulting with "motion data error" or "unauthorized change of motion

sensor" (if VU is already paired with another motion sensor). These warnings are important and recorded to the VU memory for the controller inspections.

In such a situation, it is recomended to bring STC-8250 to authorized workshops.

The messages, warnings and faults of Motion Sensor are the same as Unknown User role.

Unknown User (Role)

Unknown user refers to the role of the VU user when no card inserted, the card inserted is not authenticated by the VU or the card inserted is expired. If no card is inserted into the VU, the mode of operation becomes operational mode. However, since the card is absent in the VU, the VU can not read/write, print or download card data. In addition, the vehicle data can not be downloaded in this mode.

When an expired tachograph card is inserted into the VU, only the card information can be shown, printed or downloaded while the VU user role becomes UNKNOWN.

➔ *Please refer to the "Downloading Card Data" explanations given on page 41.*
➔ *Please refer to the "Displaying Card Data" explanations given on page 43.*
➔ *Please refer to the "Printing Card Data" explanations given on page 44.*

In such cases the user needs to apply to card issuing authority for the card renewal at www.staum.org.tr.

➔ Please refer to "Operational Mode" on page 32, for the other operations except from card operations.

Messages, Warnings and Faults of Unknown Role

There are four types of messages that can be shown on the display.

- **Messages –** gives information on the process or remind the driver. Messages can not be stored and printed. Press the backspace ◀❚ button or **OK** button to clear the message.
- **Pre-warnings –** appears as early reminders to the warnings. Pre-warnings are not stored and can not be printed. Press **OK** button twice to clear the Pre-warning.
- **Warnings (Events) –** appear in the event of e.g. overspeed or violation of the law or if the tachograph can not be recording. Warnings are stored and can be printed. Press **OK** button twice to acknowledge the Warning.
- **Faults –** are more critical to than warnings and are displayed if there is a fault detected in the tachograph, in the sensor or cards. On the other hand, faults message are shown if the device has detect a tampering. Faults are stored and can be printed. Press **OK** button twice to acknowledge the Fault.

Displayed Messages	Explanation	User Action
"Preparing"	Appears after the printing or displaying functions are called from the related vehicle or driver menus. Means that relevant data is preparing by the tachograph.	No user action required.
"Printing"	Appears when the printer is busy with printing.	No user action required.
"Stop to print"	Appears when the vehicle moves while the printing is busy with printing.	Stop the vehicle and try to print again when the vehicle is stationary.
"No paper"	Displayed when the printer is out of paper at the beginning of the print job.	Load new roll of paper to the printer drawer.
"Load Paper"	Displayed when the printer is out of paper.	Load new roll of paper to the printer drawer.
"Printer is ready"	Displayed after the new roll of paper is loaded to the printer drawer.	No user action required.
"Cancel Printing"	Displayed when the printer is not loaded with a new roll of paper in a certain period.	Press **YES** to cancel the printing job.
"Thermal stress"	Displayed if the printer has continuously printed and the printer head is too hot to continue.	Wait for the printer head is cool down and printer continues printing job or Press backspace to cancel the job. Please do not touch the printer head with your hand when this message appears.
"Not possible"	Displayed when the user trying to enter the menu while the vehicle is moving.	Stop the vehicle if necessary to navigate in the menus.
"Entry stored"	Displayed if the user input is stored by the tachograph.	No user action required.
"UTC corr. not possible"	Displayed if you are trying to correct the UTC time which has already been corrected within the last 7 days.	No user action required.
"Wrong card type 134"	Displayed if the inserted card into the tachograph is not a tachograph card. The card inserted is not accepted and ejected automatically.	Please insert a valid tachograph card.

"Non valid card 1"	A non-valid or expired card has been inserted to one of the slots.	Acknowledge the message. Eject the non-valid or expired card if it is not ejected automatically.

Displayed Pre-warnings	Explanation	User Action
⊢1 04h15 Give a break!	This message displayed after continuous driving time of 4 hour 15 minutes, which means 15 minutes left to exceed the continuous driving time (4 ½ hours)	Acknowledge the message. Find a suitable place to rest in 15 minutes.
⊢1 04h30 Give a break!	This message displayed after continous driving time of 4 ½ hours is exceeded.	Acknowledge the message. Find a suitable place and give rest break now.
›› Overspeed pre-warning	The vehicle is exceeding the overspeed limit which is set for that vehicle. If exceeding continues 30 sec. (or pre-defined value) the overspeed event will be recorded to tachograph memory.	Acknowledge the message. Reduce vehicle speed.
24⊢ Daily rest control	This message is displayed to remind the driver that maximum daily driving time is reached.	Acknowledge the message. Take a rest break.
|⊢ Weekly rest control	This message is displayed to remind the driver that maximum weekly driving time is reached.	Acknowledge the message. Take a rest break.
Service pre-warning 131	Means warning calibration expiration limit of the tachograph is exceeded. If the tachograph is activated.	Have the STC-8250 checked and calibrated by authorized workshop.

`Time for service 132`	Remaining calibration time of the tachograph is finished.	Have the STC-8250 checked and calibrated by authorized workshop.
`Battery is low 61`	Displayed if the battery level is decreased to below threshold level after the installation phase.	Acknowledge the message. Have the STC-8250 checked by authorized workshop to replace the battery.

Displayed Warnings (Events)	Explanation	User Action
!🔒 `Security breach 43`	Displayed because of PNOR flash data storasge recycle banned.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
!🔒 `Security breach 71`	Displayed because the tachograph is not personalized.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
!🔒 `Security breach 77`	Displayed because of security features removed.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
!🔒 `Motion sensor auth. failure 17`	Displayed if the tachograph does not authenticate with the motion sensor	Acknowledge the message. Have the STC-8250 checked by authorized workshop.
!🔒 `Card auth. failure 18`	Displayed if the tachograph does not authenticate with the smart card.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.
!🔒 `Unauthorized change of MS 19`	Displayed if unpaired motion sensor is linked to the tachograph paired with another motion sensor.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.

`!🔒  Data integ.` `    err. 21`	The tachograph data is corrupted.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.
`!🔒  Auth.` `    failure 33`	Displayed when error related to authentication occurs in the motion sensor.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
`!🔒  Data integ.` `    err. 34`	Displayed when error related to nonvolatile memory occurs in the motion sensor.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
`!🔒 Hardware` `   Sabotage 24`	Card(s) has been ejected by force has been detected.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.
`!🔒 Hardware` `   Sabotage 37`	Displayed when error related to sensor element or temperature occurs in the motion sensor and the tachograph is not in calibration mode.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.

`!⊥ Power`
`   supply`
 	
`interruption 8`
	The power supplied to the STC-8250 is below or above the limit for the proper operation or has been disconnected for more than 200 miliseconds. The event is not triggered in Calibration Mode.	Acknowledge the message.
		Have the STC-8250 checked by authorized workshop.

`!0█Driving w/o` `   valid card 4`	Driving started with an inappropriate card or with an inappropriate card combination.	Acknowledge the message. Stop vehicle and insert a valid driver card or remove inappropriate card from co-driver slot.

`!█0Card`
`   insertion`
`   while`
`   driving 5`
	A driver card was inserted after driving has begun.	Acknowledge the message. No further action required.

`!``Time overlap 3`	The Last withdrawal date/time of the inserted driver card from previous tachograph is later than the date/time of this tachograph.	Acknowledge the message. Check the date/time of the tachographs used and determine the tachograph with the incorrect UTC time, make the tachograph time to be corrected by authorized workshop. Or, wait for the overlap period to be elapsed.
`!``Card closed incorrectly 6`	Card was not removed properly from the last tachograph or data could not be saved to the card correctly.	Acknowledge the message. No further action required.
`>> Overspeed 7`	Driver exceeded the permissible max speed limit for longer than 1 minutes.	Acknowledge the message. Reduce vehicle speed.
`!`` Motion sensor data error 9`	The data link failure occurred between the motion sensor and the tachograph.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.
`` Vehicle motion conflict 10`	Displayed if the second source of motion data (GPS or CAN-Bus) is not consistent with the primarily used motion sensor data.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.

Displayed Faults	Explanation	User Action
✕ 🖩 Internal fault 1	Displayed because of the tachograph internal fatal error.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✕ 🖩 Internal fault 2	Displayed because system time reaches end. (2099)	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✕ 🖩 Internal fault 4	Displayed because the security processor is inaccessible.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✕ 🖩 Internal fault 5	Displayed because the system memory is inaccessible.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✕ 🖩 Internal fault 31	Displayed because the smart card reader power up voltage is an invalid.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✕ 🖩 Internal fault 32	Displayed because the smart card reader protocol is unsupported.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✕ 🖩 Internal fault 33	Displayed because of smart card in invalid slot.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✕ 🖩 Internal fault 34	Displayed because of smart card unexpected value.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.

✗ ⊟ `Internal fault 41`	Displayed because of data storage insufficent.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✗ ⊟ `Internal fault 44`	Displayed because of Pnor flash data access error.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✗ ⊟ `Internal fault 72`	Displayed because of security processor integrity fault.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✗ ⊟ `Internal fault 73`	Displayed because of omap integrity fault.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✗ ⊟ `Internal fault 74`	Displayed because of security data integrity error.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✗ ⊤ `Printer fault 50`	Printer's supply voltage is failed or printer head is defective.	Acknowledge the message. Repeat print request and if necessary switch off / on the ignition.
✗ ☐ `Display fault 51`	Displayed while in the built-in-test (display test) if the display is not working properly.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.
✗ ⤓ `Downloading fault 52`	Displayed if the downloading process has been interrupted	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.
✗ Ⅱ `Sensor fault 53`	Displayed when error related to controller ram or controller instruction or communication occurs in the motion sensor.	Acknowledge the message. Have the STC-8250 checked by authorized workshop if this fault occurs frequently.

`✕▣1 No further details 64` `✕▣2 No further details 64`	Displayed because of generic smart card fault.	Acknowledge the message. Check if the card contact surface is clean. If it is not, clean the contacts and insert it again.
`!▯ No further details 16`	Displayed because of generic tachograph error.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.
`!▯ No further details 32`	Displayed because of generic sensor error.	Acknowledge the message. Have the STC-8250 checked by authorized workshop.

Acoustic Alerts

STC-8250 generates acoustic alerts (beep tone) to warn user about some warning situations (events) or irrelevant user entries. Acoustic alerts can be heard on these events:

1. Overspeed,
2. Irrelevant user entries,

General Settings

Language

The STC-8250 supports fifteen languages for now. The language which is used for the display depends on the tachograph card which is inserted to the driver card slot. The language is automatically adjusted upon card insertion or withdrawal. However, it can be selected manually from the vehicle menu.

To perform manual language selection:

1. Press **OK** to enter main menu. Select **Vehicle menu Language** by using control ◀ / ▶ keys. Press **OK** to enter the menu. Select the desired language you want to set. Press **OK** to activate the current language selection. After confirmation STC-8250 returns one level back.

```
Vehicle menu          ----▶      □ Language
□ Language                       EN:English
```
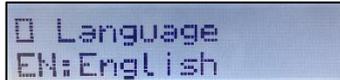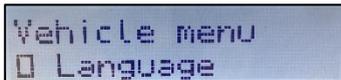
Display Backlight Level

STC-8250 Backlight level can be adjusted manually from the menu if the backlight source is selected as Menu from Service Configuration settings. Backlight level can also be adjusted from the A2 illumination Pin or from the CAN-Bus of the vehicle. These settings will be detailly explained in the "*Workshop Manual*", please refer to that documentation for further information.

To adjust display backlight level:

1. Press **OK** to enter main menu. Select **Vehicle menu Entry** by using control ◄ / ► keys. Press **OK** to enter the menu. Select **Entry Backlight lev.** by using control ◄ / ► keys. Press **OK** to enter the menu. The current backlight level is displayed. Adjust the backlight level to the desired level by using control ◄ / ► keys. Press **OK** to save current settings. After confirmation STC-8250 returns one level back.

```
Vehicle menu          ----▶      ⏏+ Entry
⏏+ Entry                         □ Backlight lev.
```

```
Backlight lev.:       ◀----      Backlight lev.:
▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮                  ▮▮▮▮▮
```
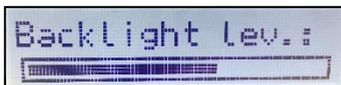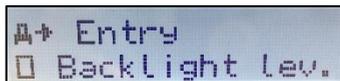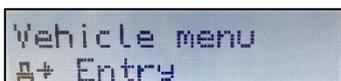
Local Time

In STC-8250 standart (default) display, local time is only shown as information and may be adjusted according to the current time in a specific country. Local time can be adjusted manualy in steps of ±30 minutes from the menu.

To adjust the local time, do as follows:

1. Press **OK** to enter main menu. Select **Vehicle menu Entry** by using control ◄ / ► keys. Press **OK** to enter the menu. Select **Entry Local time** by using control ◄ / ► keys. Press **OK** to enter the menu. The current UTC and Local time is displayed. Adjust the local time to the desired value in steps of ±30 minutes by using control ◄ / ► keys. Press **OK** to save current settings. After confirmation STC-8250 returns one level back.

```
Vehicle menu          ----▶      ⏏+ Entry
⏏+ Entry                         ●◉ Local time
```

```
UTC⊕  23/03/2015
13:48        15:48
```
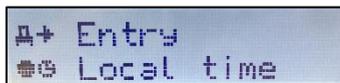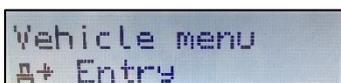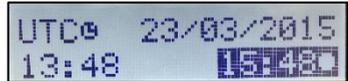
➔ *Please refer to "National / Regional abbreviations and European time zones" on page 118.*

UTC Correction

All of the tachograph activities are registered to the memory in UTC time (Universal Time Coordinated). You can correct the UTC time by ±1 minute per week. Greater deviations can only be changed by an authorized workshops with calibration process.

To make UTC correction, follow the steps:

• Press **OK** to enter main menu. Select **Vehicle menu Entry** by using control ◄ / ► keys. Press **OK** to enter the menu. Select **Entry UTC time corr.** by using control ◄ / ► keys. Press **OK** to enter the menu. The current UTC time is displayed. Adjust the UTC time to the desired value in steps of ±1 minutes by using control ◄ / ► keys. Press **OK** to save current settings. After confirmation STC-8250 returns one level back.
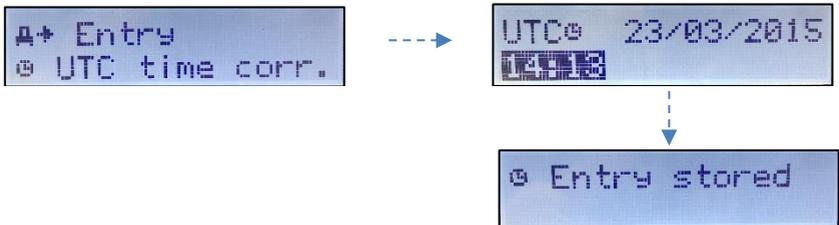
If you try to correct the UTC time within 7 days, and you will get the following message on the display.
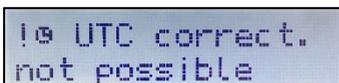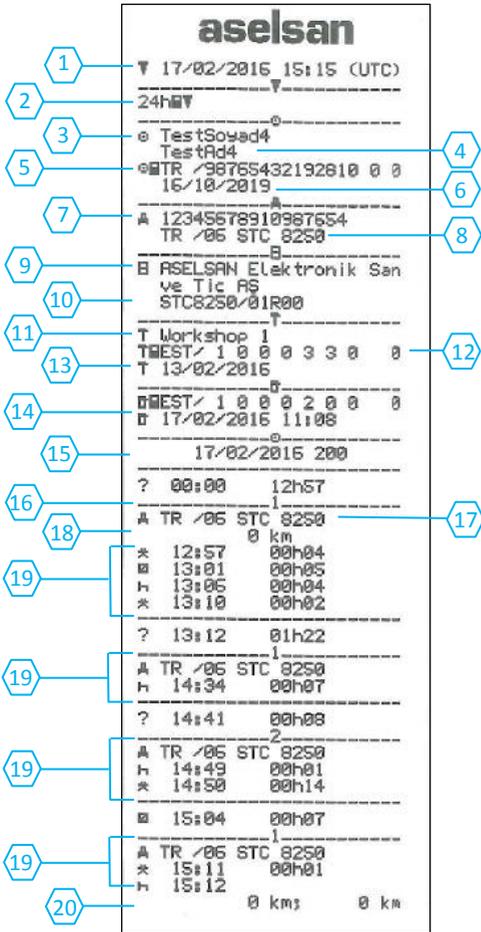
Pictogram Combinations

Symbol	Meaning / Description
⧠●	Control Place
●⊩	Location start of daily work period
⊩●	Location end of daily work period
🕗+	From time
+🕗	To time
д+	From vehicle
OUT+	Out of scope begin
+OUT	Out of scope end
⊡▯	Driver card
⌂▯	Company card
⊡▯	Control card
⊤▯	Workshop card
▯ - - -	No card
⊡⊡	Crew driving
⊡|	Driving time for one week
⊡||	Driving time for two weeks
24h▯⊤	Daily driver activity printout from smartcard
24hд⊤	Daily driver activity printout from tachograph memory
!x▯⊤	Printouts of events and faults from smartcard
!xд⊤	Printouts of events and faults from tachograph memory
⊤🕗⊤	Technical data printout
>>⊤	Over speeding (speed infringment) printout
! ▯	Insertion of a non valid smartcard
! ▯▯	Card conflict
! 🕘🕘	Time overlap
! ⊡▯	Driving without appropriate card
! ▯⊡	Card insertion while driving
! ▯д	Last card session not correctly closed
>>	Over speeding
! ✝	Power supply interrruption
! Д	Motion data error
! 🔒	Security breach
! 🕘	Time adjustment (by workshop)
>⊡	Over speeding control
!дД	Vehicle motion conflict
✕▯1	Card fault (driver slot)

Symbol	Meaning / Description
x ▪2	Card fault (co-driver slot)
x ▢	Display fault
x ⊥	Downloading fault
Symbol	**Meaning / Description**
x ▼	Printer fault
x ⊓	Sensor fault
x ▯	Vu internal fault
▮▶?▶▮	Still the same daily work period?
▶▮?	End of previous work period?
▶▮● ?	Confir or enter location of end of work period
◕▮▶?	Enter start time
●▮▶?	Enter location of start of work period

Sample Printouts

24h Driver Card Printout

aselsan

```
▼ 17/02/2016 15:15 (UTC)
----------▼----------
24h▣▼
----------◇----------
⊙ TestSoyad4
  TestAd4
⊙▣TR /98765432192810 0 0
  16/10/2019
----------▲----------
▲ 12345678910987654
  TR /06 STC 8250
----------▣----------
🖳 ASELSAN Elektronik San
  ve Tic AS
  STC8250/01R00
----------▼----------
T Workshop 1
T▣EST/ 1 0 0 0 3 3 0    0
T 13/02/2016
----------▣----------
▣▣EST/ 1 0 0 0 2 0 0    0
▣ 17/02/2016 11:08
----------◇----------
    17/02/2016 200
----------------------
? 00:00      12h57
----------1-----------
▲ TR /06 STC 8250
      0 km
* 12:57      00h04
▣ 13:01      00h05
🛏 13:06      00h04
* 13:10      00h02
----------------------
? 13:12      01h22
----------1-----------
▲ TR /06 STC 8250
🛏 14:34      00h07
? 14:41      00h08
----------2-----------
▲ TR /06 STC 8250
🛏 14:49      00h01
* 14:50      00h14
----------------------
▣ 15:04      00h07
----------1-----------
▲ TR /06 STC 8250
* 15:11      00h01
🛏 15:12
      0 kms     0 km
```

1 Date and time of printout (UTC).
2 Type of printout (24h, card).
3 Card holder's surname.
4 Card holder's first name.
5 Card and country identification number.
6 Expiry date of the card inserted.
7 Vehicle identification, VIN.
8 Registering member state and Vehicle Registration Number (VRN).
9 Tachograph manufacturer's name.
10 Tachograph part number.
11 Workshop name where the last Calibration is made.
12 Workshop card identification number.
13 Date of the last calibration.
14 Last control the inspected driver has been subjected to.
15 Enquiry date and daily card presence counter.
16 Slot where card was inserted.
17 Vehicle Registration Number (VRN), for the vehicle where the driver card was inserted.
18 Vehicle odometer at card insertion.
19 Activities while driver card inserted, start and duration time, crew status.
20 Card withdrawal: Vehicle odometer and distance travelled since last insertion for which odometer is known.

24h Driver Card Printout
Continued
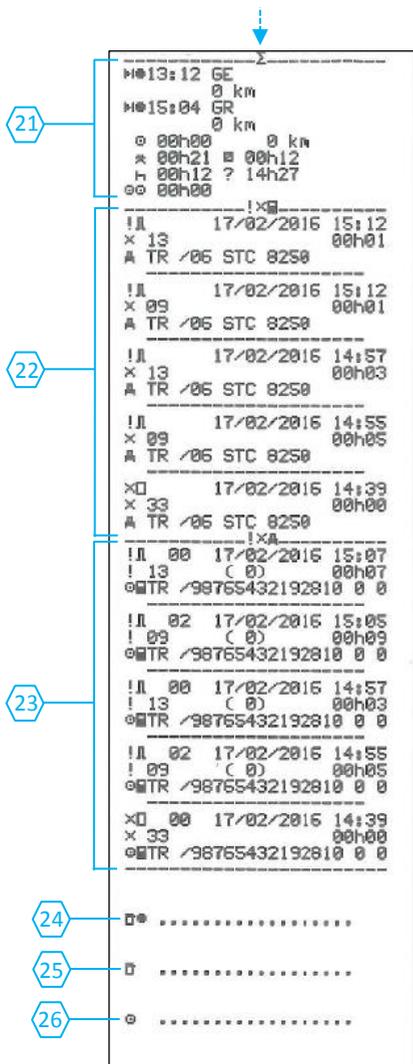
21 Daily summary of activities.
22 Last five events and faults stored in the driver card.
23 Last five events and faults stored in the vehicle unit (VU).
24 Control place.
25 Controller´s signature.
26 Driver´s signature.

24h Vehicle Unit Printout

1 Date and time of printout (UTC).
2 Type of printout (24h, VU).
3 Card holder's surname (driver).
4 Card holder's first name (driver).
5 Card and country identification number.
6 Expiry date of the driver card.
7 Card holder's surname (co-driver).
8 Card holder's first name (co-driver).
9 Card and country identification number.
10 Expiry date of the co-driver card.
11 Drivers activities stored in the VU per slot in chronological order.
12 Enquiry date.
13 Vehicle odometer at 00:00 and 24:00.
14 Driver
15 Registration member state and vehicle registration number of previous vehicle used.
16 Date and time of card withdrawal from previous vehicle.
17 Vehicle odometer at card insertion.
18 Activities with start and duration time.

24h Vehicle Unit Printout Continued

```
----------2----------
▯ - - - -
          0 km
⊢ 00:00  00h12
▯ 08:12  00h20
  08:27  -----OUT+----
  08:29  ----+OUT-----
          5 km;   5 km
----------------------
⊙TestSoyad4
 TestAd4
⊙▯TR /98755432192810 0 0
 16/10/2019
A+ TR /06 STC 8250
 16/02/2016 07:22
          5 km
▯ 08:32  00h03 ⊙⊙
▯ 08:35  00h02
⊢ 08:37  00h01
          5 km;   1 km
----------------------
▯ - - - -
          6 km
⊢ 08:38  00h18
          6 km;   0 km
----------------------
⊙TestSoyad4
 TestAd4
⊙▯TR /98755432192810 0 0
 16/10/2019
A+ TR /06 STC 8250
 17/02/2016 08:38
          6 km
⊢ 08:56  00h39 ⊙⊙
----------Σ----------
1⊙▯ - - -
 ⊙ 00h02        2 km
 ✳ 00h25 ▯ 00h02
 ⊢ 08h02
2⊙▯ - - -
 ✳ 00h00 ▯ 00h20
 ⊢ 08h30
----------------------
⊙Musterfrau 0
 Krista 0
⊙▯FIN/11000000072120 0 0
▶▯⊙ 07:53  FIN
          0 km
▶▯⊙ 08:35  FL
          6 km
 ⊙ 00h04        4 km
 ✳ 00h49 ▯ 00h08
 ⊢ 00h03
 ⊙⊙ 00h42
----------------------
⊙TestSoyad4
 TestAd4
⊙▯TR /98755432192810 0 0
▶▯⊙ 08:38  FO
          6 km
 ⊙ 00h00        1 km
 ✳ 00h00 ▯ 00h05
 ⊢ 00h40
 ⊙⊙ 00h42
----------!×▯----------
1⊙▯ 01  17/02/2016 08:12
! 04    ( 1)       00h02
▯ - - -
----------------------
!÷  02  17/02/2016 07:58
! 08    ( 0)       00h01
▯ - - -
----------------------
!Л 01  17/02/2016 07:38
! 09    ( 1)       01h11
▯ - - -
----------------------
!÷  01  17/02/2016 07:34
! 08    ( 2)       00h03
▯ - - -
----------------------
!▯A 00  15/02/2016 07:21
! 06    ( 0)       00h00
⊙▯FIN/11000000072120 0 0
⊙▯TR /98755432192810 0 0
```

19 Co-driver.

20 Registration member state and vehicle registration number of previous vehicle used.

21 Date and time of card withdrawal from previous vehicle.

22 Vehicle odometer at card insertion.

23 Summary of periods without card in driver slot.

24 Summary of periods without card in co-driver slot.

25 Daily summary of activities (driver).

26 Daily summary of activities (co-driver).

27 Hand-written and signature part.

```
▯⊙ ...................
▯ ...................
⊙+ ...................
+⊙ ...................
⊙ ...................
```

Events & Faults Vehicle

Unit Printout

1 Date and time of the printout.
2 Type of printout.
3 Vehicle Identification Number (VIN)
Vehicle Registration Number (VRN)
and Registering Member State.
4 Driving without valid card (event).
5 Last card session not correctly closed
(event).

Events & Faults Vehicle Unit Printout Continued

6 Power supply interruption (event).
7 Motion data error (event).
8 No further details (event).
9 Card authentication failure (event).
10 Unauthorised change of motion sensor (event).
11 Printer fault (fault).
12 Control place.
13 Controller's signature.
14 Driver's signature.

➔ *Refer to Workshop Manual (AVU-AGD-PRE) for "List of Event and Fault Codes and Diagnostic Trouble Codes (DTCs)"*

Detailed view of events & faults VU printout

1 Type of event or fault (card conflict).

2 Event or fault code (card conflict).

3 Event or fault record purpose:

  00 - one of the 10 most recent (or last) events or faults.

  01 - the longest event for one of the last 10 days of occurrence.

  02 - one of the 5 longest events over the last 365 days.

  03 - the last event for one of the last 10 days of occurrence.

  04 - the most serious event for one of the last 10 days of occurrence.

  05 - one of the 5 most serious events over the last 365 days.

  06 - the first event or fault having occurred after the last calibration.

  07 - an active/on-going event or fault.

4 Date of event or fault.

5 Start time of event or fault.

6 Number of events of the same type during the day.

  0 – For this event, it is not necessary to save "Number of similar events"

  1 – One event of this type occurred on this day.

  2 – Two event of this type occurred on this day, but only the one was saved.

  n – "n" events of this type occurred on this day, but only the one was saved.

7 Duration of event or fault.

8 Card inserted in slot 1 at the beginning of event or fault (Driver card).

9 Card issue country.

10 Card number (shown with every even number replaced with a space if not in calibration or company mode or if no card is inserted).

➔ *Refer to Workshop Manual (AVU-AGD-PRE) for "List of Event and Fault Codes and Diagnostic Trouble Codes (DTCs)"*

Events & Faults Card Printout
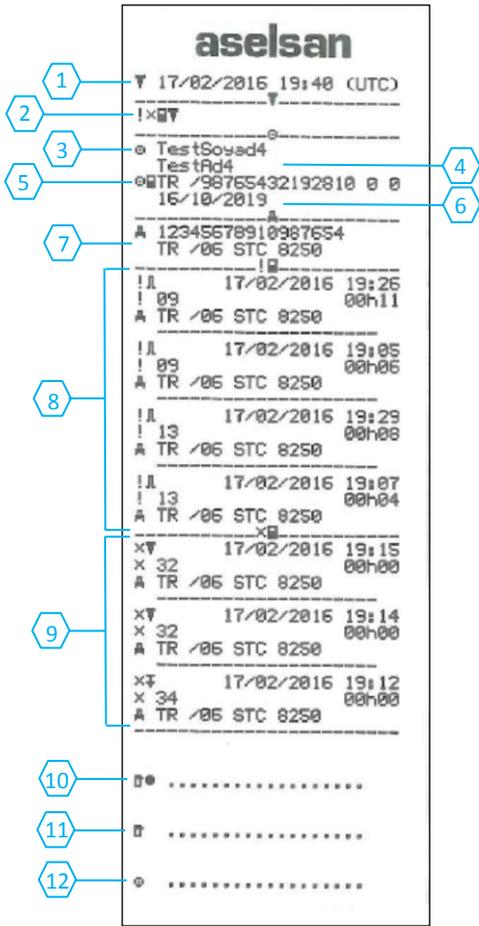
1 Date and time of the printout (UTC).
2 Type of printout.
3 Card holder's surname.
4 Card holder's first name.
5 Card and country identification number.
6 Expiry date of the card.
7 Vehicle identification. VIN, registering member state and VRN.
8 List of all events stored on the card.
9 List of all faults stored on the card.
10 Control place.
11 Controller´s signature.
12 Driver´s signature.

Overspeeding Printout

```
aselsan
▼ 15/02/2016 13:37 (UTC)
----------▼----------
>>▼    90 km/h
----------□----------
□ Musterfrau 2
  Krista 2
□■EST/41000000029010 0 0
  20/06/2024
----------A----------
A 12345678910987654
  TR /06 STC 8250
          >>
>>14/02/2016 13:28
>>15/02/2016 13:30 ( 1)
          >>T
>>14/02/2016 12:47 00h02
  96 km/h   95 km/h( 6)
⊙ Musterfrau 0
  Krista 0
⊙■FIN/11000000072120 0 0
        >>(365)
>>15/02/2016 13:30 00h04
  115 km/h 114 km/h( 0)
⊙ Musterfrau 0
  Krista 0
⊙■FIN/11000000072120 0 0
>>14/02/2016 13:10 00h05
  120 km/h 119 km/h( 0)
⊙ TestSoyad4
  TestAd4
⊙■TR /98765432192810 0 0
>>14/02/2016 13:05 00h03
  110 km/h 109 km/h( 0)
⊙ TestSoyad4
  TestAd4
⊙■TR /98765432192810 0 0
>>14/02/2016 12:54 00h04
  102 km/h 101 km/h( 0)
⊙ Musterfrau 0
  Krista 0
⊙■FIN/11000000072120 0 0
>>14/02/2016 12:51 00h02
  106 km/h 105 km/h( 0)
⊙ Musterfrau 0
  Krista 0
⊙■FIN/11000000072120 0 0
        >>(10)
>>15/02/2016 13:30 00h04
  115 km/h 114 km/h( 1)
⊙ Musterfrau 0
  Krista 0
⊙■FIN/11000000072120 0 0
>>14/02/2016 13:10 00h05
  120 km/h 119 km/h( 6)
⊙ TestSoyad4
  TestAd4
⊙■TR /98765432192810 0 0

□✱ ................
□ ................
⊙ ................
```

1 Date and time of the printout (UTC).

2 Type of printout. (overspeeding, speed limiting setting).

3 Card holder's surname.

4 Card holder's first name.

5 Card and country identification number.

6 Expiry date of the driver card.

7 Vehicle identification. VIN, registering member state and VRN.

8 Date and time of the last overspeeding control.
Date and time of first overspeeding and number of overspeeding events.

9 First overspeeding after the last calibration.
Date time and duration.
Max and average speed.
Driver and drivers card identification.

10 Five most serious overspeeding over the last 365 days.
Date time and duration.
Max and average speed.
Driver and drivers card identification.

11 Most serious overspeeding events over the last ten days.
Date time and duration.
Max and average speed.
Driver and drivers card identification.

12 Control place.

13 Controller´s signature.

14 Driver´s signature.

Technical Data Printout

1 Date and time of printout (UTC).

2 Technical data printout.

3 Card holder Identification.

4 Vehicle Identification Number (VIN).

5 Vehicle Registration Number (VRN)
And registering member state.

6 Tachograph manufacturer.

7 Tachograph part number.

8 Tachograph approval number.

9 Tachograph serial number.

10 Year of manufacture.

11 Software version and installation date

12 Motion sensor serial number.

13 Motion sensor approval number.

14 Motion sensor first installation date.

15 Workshop name having performed
the calibration.

16 Workshop address.

17 Workshop card identification.

18 Workshop card expiry date.

19 Calibration date and purpose,

➔ *Please refer to "**Workshop Manual**".*

20 VIN (shown as question marks before
registered).

21 VRN (shown as question marks before
registered) registering member state.

22 Characteristic coefficient of vehicle.

23 Constant of the recording equipment.

24 Effective circumference of wheel tyres

25 Size of tyres.

26 Authorized speed setting.

27 Old and new odometer values.

28 Calibration date and purpose.

29 VIN.

30 VRN and country of registration.

31 Old date and time.

32 New date and time.

33 Most recent event date time.

34 Most recent fault date time.

aselsan

```
▼ 13/02/2016 17:11 (UTC)
------------▼------------
T⊕▼
------------B------------
🗅 Musterfrau 2
  Krista 2
🗅TEST/410000000029010 0 0
  20/06/2024
------------A------------
A 123456789109876S4
  TR /06 STC 8250
------------B------------
🗅 ASELSAN Elektronik San
  ve Tic AS
  296 Cad No 16 Ankara
  06370 Turkey
  STC8250/01R00
  e#xxxx
  0000000001
  2016
  V 1.0      13/02/2016
------------A------------
🔟 0090000399/0714/07/A1
  e1-17S
  13/02/2016
------------T------------
T Workshop 1
  address 1
🗅TEST/210000000037320 0 0
  20/06/2024
T 13/02/2016 (1)
A ??????????????????
  WLD/?????????????
w  8000 Imp/km
k  8000 Imp/km
L     0 mm
● ??????????????????
>  0 km/h
        0km;        0km
   ----------------------
T Workshop 1
  address 1
🗅TEST/210000000037320 0 0
  20/06/2024

T 13/02/2016 (2)
A 123456789109876S4
  TR /06 STC 8250
w  8000 Imp/km
k  8000 Imp/km
L  2098 mm
● 225 45R17
>  90 km/h
        128km;      128km
   ----------------------
T Workshop 1
  address 1
🗅TEST/210000000037320 0 0
  20/06/2024

T 13/02/2016 (3)
A 123456789109876S4
  TR /06 STC 8250
w  8000 Imp/km
k  8000 Imp/km
L  2098 mm
● 225 45R17
>  90 km/h
        128km;      128km
------------⊕------------
!⊕ 13/02/2016 16:36
 ⊕ 13/02/2016 16:42
T Workshop 1
  address 1
🗅TEST/210000000037320 0 0
  20/06/2024
------------!×A------------
! 13/02/2016 17:09
× 13/02/2016 17:08
```

Software Information

You can display the software & hardware version numbers and serial & part number info defined on the STC-8250.

1. To display software and hardware version, follow the steps:

   Press **OK** to enter main menu. Select **Vehicle menu Display** by using control ◄ / ► keys. Press **OK** to enter the menu. Select **Version info** by using control ◄ / ► keys. Press **OK** to display the software and hardware version. Use control ◄ / ► keys to see the software and hardware versions. Press **OK or Backspace** ◄ to navigate one level back.

```
Vehicle menu
A□ Display
```
\- - - ▶
```
A□ Display
□ Version info.
```

```
Software
```
\- - - ▶
```
Version Number:
0.8.3
```

```
Hardware
```
\- - - ▶
```
Part Number:
5820-8250-0001
```

```
Serial Number:
0000000000
```
\- - - ▶
```
Version Number:
STC 8250 RevA
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National / Regional abbreviations and European time zones

The following table provides an overview of national and regional abbreviations, as well as time zones:

Nation	Abbreviation	Time zone offset
Austria	A	+01:00h
Albania	AL	+01:00h
Andorra	AND	+01:00h
Armenia	ARM	+04:00h
Azerbaijan	AZ	+03:00h
Belgium	B	+01:00h
Bulgaria	BG	+02:00h
Bosnia and Herzegovina	BIH	+01:00h
Belarus	BY	+02:00h
Croatia	HR	+01:00h
Cyprus	CY	+01:00h
Czech Republic	CZ	+01:00h
Denmark	DK	+01:00h
Estonia	EST	+02:00h
Faeroe Islands	FR	+00:00h
Finland	FIN	+02:00h
France	F	+01:00h
Georgia	GE	+02:00h
Germany	D	+01:00h
Greece	GR	+02:00h
Hungary	H	+01:00h
Iceland	IS	+00:00h
Ireland	IRL	+00:00h
Italy	I	+01:00h
Kazakhstan	KZ	+04:00h to +06:00h
Latvia	LV	+02:00h
Lichtenstein	FL	+01:00h
Lithuania	LT	+02:00h
Luxembourg	L	+01:00h
Malta	M	+01:00h
Macedonia	MK	+01:00h
Monaco	MC	+01:00h
Montenegro	MNE	+01:00h
Netherlands	NL	+01:00h
Norway	N	+01:00h
Poland	PL	+01:00h
Portugal	P	+00:00h

Republic of Moldova	MD	+02:00h
Romania	RO	+02:00h
Russian Federation	RUS	+03:00h
San Marino	RSM	+01:00h
Serbia	SRB	+01:00h
Slovakia	SK	+01:00h
Slovenia	SLO	+01:00h
Spain	E	+01:00h
Sweden	S	+01:00h
Switzerland	CH	+01:00h
Tajikistan	TJ	+05:00h
Turkey	TR	+02:00h
Turkmenistan	TM	+05:00h
Ukraine	UA	+02:00h
United Kingdom	UK	+00:00h
Uzbekistan	UZ	+05:00h
Vatican City	V	+01:00h
Yugoslavia	YU	+01:00h
European Community	EC	
Rest of Europe	EUR	
Rest of World	WLD	

Region Abrreviations of Spain

Region	Abbreviation
Andalusia	AN
Aragon	AR
Asturias	AST
Cantabria	C
Catalonia	CAT
Castil-Leon	CL
Castile-La Mancha	CM
Valencia	CV
Extremadura	EXT
Galicia	G
Balearic islands	IB
Canary islands	IC
La Rioja	LR
Madrid	M
Murcia	MU
Navarra	NA
Basque Community	PV

Warnings about Tachograph Usage

⚠️ *Before starting to use the STC-8250 digital tachograph, read all related guides and manuals.*

⚠️ *Keep the STC-8250 digital tachograph away from dust and humidity. Do not leave the tachograph under direct sun exposure.*

⚠️ *Do not drop or force the STC-8250 digital tachograph at the extent, which could make physical damage.*

⚠️ *If the STC-8250 digital tachograph is damaged by an accident, inform the company or related authorised bodies providing the serial number and vehicle identification number of the device!*

Care of Tachograph

To increase the life-time of your tachograph please be aware of the following:

- Try to keep the tachograph and the environment where it is installed clean and dust-free.
- Clean the plastic box, display and the function keys with a slightly moistened cloth.
- Do not use any alcohol or chemical cleaning solvents to clean any parts of the tachograph.
- Do not insert objects or other cards (rather than tachograph cards, e.g. credit cards) to the card slots otherwise the cards and the tachograph may be damaged.
- Protect the tachograph from direct sunlight (do not allow it to be installed on the vehicle dashboard).

Care of Cards

Please take care of the cards and keep in mind the following:

- Try to keep the card contacts free from dirt and dust.
- Clean the cards with a slightly moistened soft cleaning cloth if the contacts has grease or oil.
- Do not bend or fold the cards and do not use it for anything other than their primarily usage.
- Protect it from damage and do not use damaged cards in the tachograph.
- Do not let the cards to be under strong electromagnetic field.

Warranty and Producer Information

The warranty period for STC-8250 digital tachograph is two years.

To get the most out of your purchase, be sure to carefully read this manual and keep it on hand for later reference when needed.

⚠️ *Before using your STC-8250 digital tachograph, please read this operation manual.*

Should you encounter any problems with this product, or its features, please refer to this operation manual. If you require further assistance after reading this manual, please contact your local dealer.

For warranty, product service and accessory information, please contact your local dealer or distributor.

⚠️ *Do not attempt to change battery or repair any internal parts by yourself.*

This STC-8250 digital tachograph should be opened by authorized personnel only.

Otherwise, the warranty VOIDS.

Document Revision History

Rev. No	Revision Reason	Date of Revision
0.1	First Release	04/04/2016
0.2	Second Release	12/04/2016
0.3	Updated according to TAC-OR-024 (chapter 5 is added, Unknown User Role defined, minor editorial changes)	01/07/2016
0.4	Updated according to TAC-OR-024 (Unknown User Role, unknown equipment and motion sensor re-defined, minor editorial changes)	08/08/2016
0.5	User definitions and error messages are revised.	30/01/2017
0.6	Version info is corrected, minor editorial changes	09/05/2017
0.7	Minor changes because of new software version.	19/10/2017

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