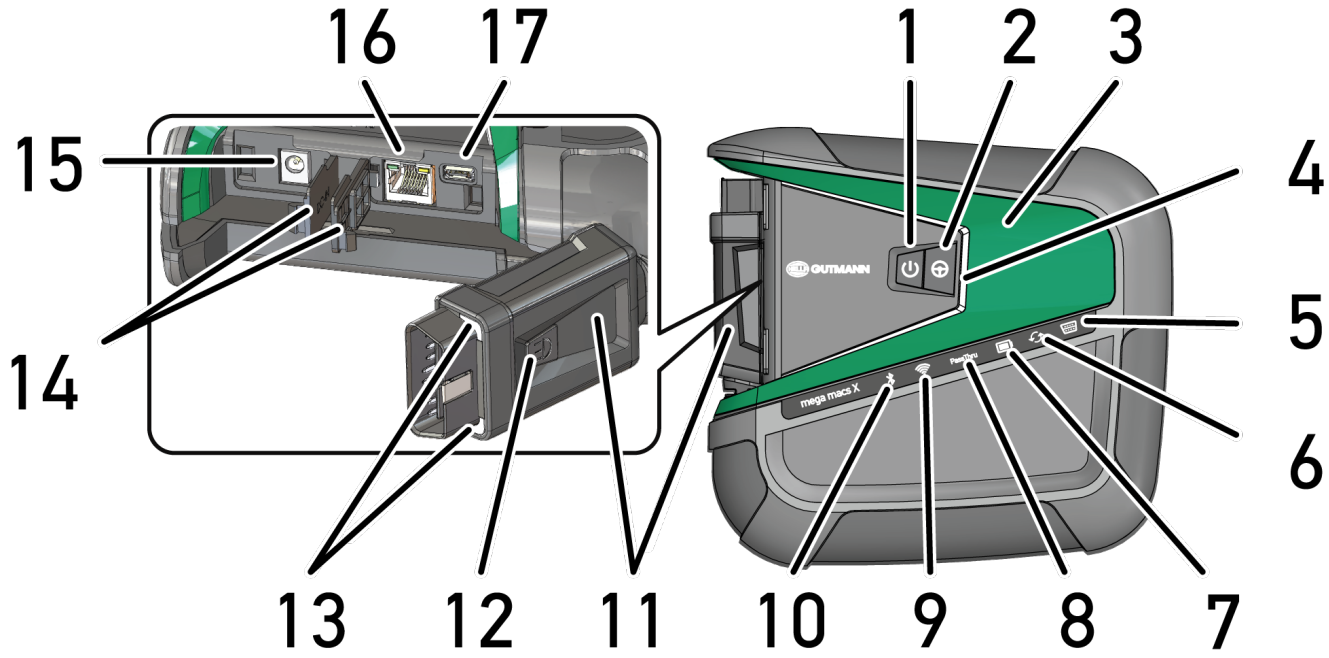
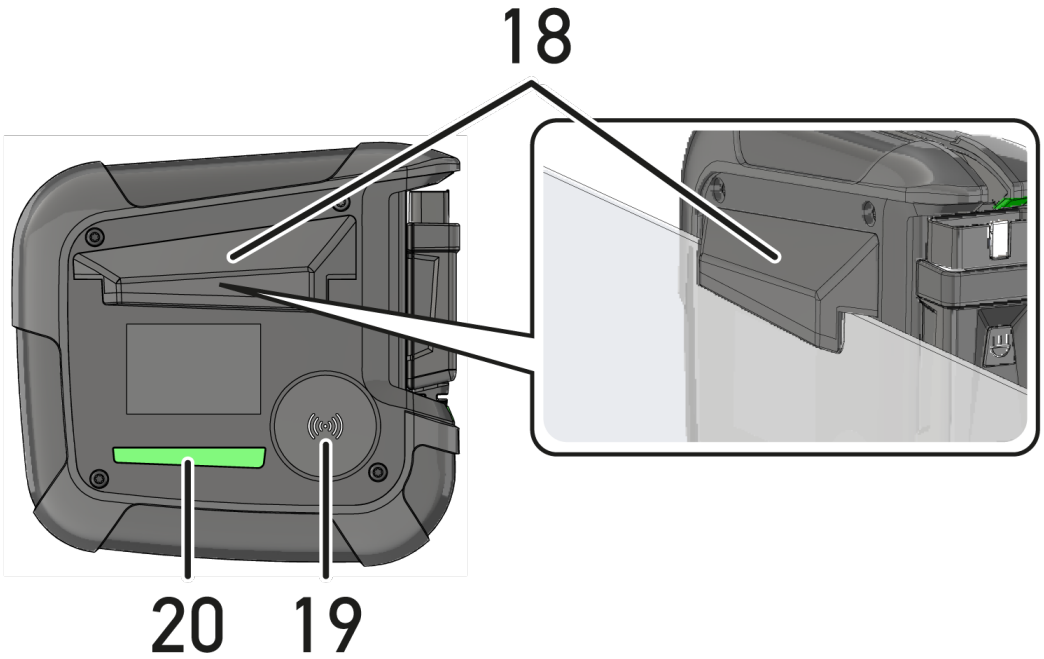
4.4. mega macs X



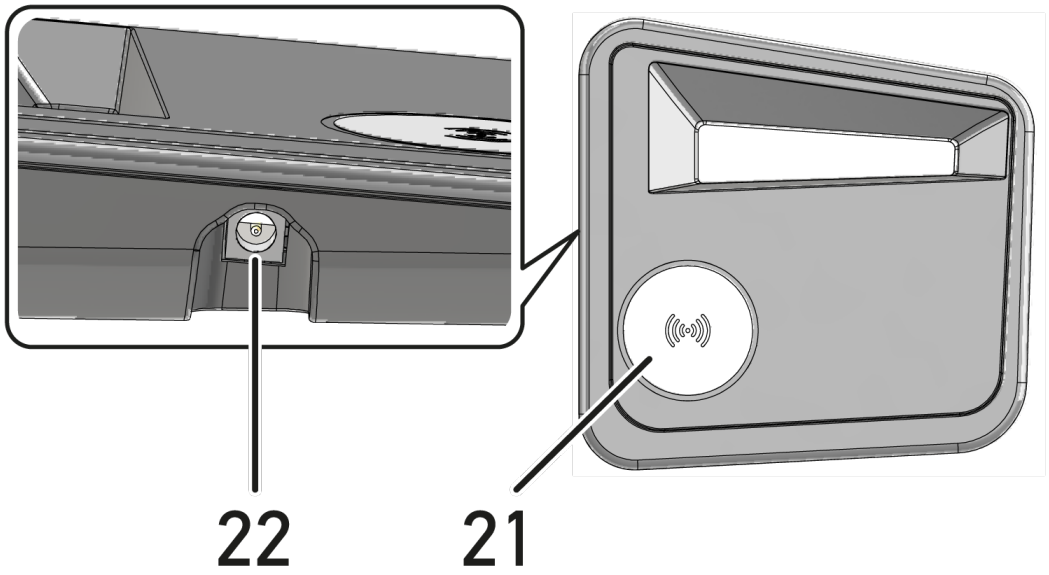


	Name
1	**ON/OFF button** Switch the mega macs X on and off with the ON/OFF button.
2	**Special button**
3	**Swoosh**
4	**LED progress bar** The LED progress bar serves for user communication and indicates the different states of the mega macs X.

	Name
	The different states and interactions are explained in the section User Communication [▶ 19].
5	**OBD** This LED indicates the state of charge of the vehicle battery. It can be green, yellow or red. The threshold values are: • red: <11.5 V • yellow: 11.5 - 11.9 V • green: >12 V
6	**Update** This LED indicates that an update is in progress.
7	**Battery status** This LED indicates the various battery charging states. The different battery status display are explained in the section User Communication [▶ 19].
8	**PassThru** This LED indicates a PassThru connection.
9	**Wi-Fi** This LED indicates the status of the Wi-Fi hotspots of the mega macs X. • The LED will flash in green if you start the Wi-Fi hotspot. • The LED will permanently light up in green if the Wi-Fi hotspot is ready. • The LED will light up in red if the maximum number of Wi-Fi users of the mega macs X (max. 3 users) is reached.
10	**Bluetooth®** This LED indicates that the mega macs X is connected via Bluetooth®.
11	**OBD plug**
12	**Light button** Two LEDs at the OBD plug light up if you push the light button.
13	**LEDs**
14	**Cover caps**
15	**Power supply socket** Connect a power adapter to the power supply socket to supply the mega macs X with voltage and to charge the internal battery. It is recommended to use the enclosed charging tray for device charging.
16	**Ethernet interface**
17	**USB interface**

	Name
18	**Bracket** Use tha bracket to attach the mega macs X safely to the side window.
19	**Charging area of the mega macs X** The mega macs X can be inductively charged through the charging area.
20	**LED light strip** The LED light strip on the back of the mega macs X enables you to monitor the device.

4.5. Charging tray



	Name
21	**Charging area of charging tray** The mega macs X can be inductively charged through the charging area.
22	**Power supply socket** The power supply socket supplies power to the charging tray.

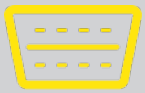
4.6. User Communication

Meaning of the buttons, LEDs and the Swoosh element with different interactions:

Interaction	Button / status	Swoosh
Switch on the mega macs X – briefly push ON/OFF When the mega macs X is switched off and you briefly push ON/OFF, the Swoosh will light up several times until the start procedure is completed.		

Interaction	Button / status	Swoosh
Switch off the mega macs X – push and hold ON/OFF for a little while If you push the ON/OFF button of the mega macs X for 2 seconds, the center segment of the Swoosh will light up and you can release the ON/OFF button. The system will then shut down automatically.		
Push the special button If you push the special button, the center segment of the Swoosh will light up once for 0.2 seconds.		
LED torch If the mega macs X is switched on or off and you push the light button at the OBD plug, the two LEDs at the OBD plug will light up.		
Find my mega macs X In order to facilitate the assignment between tablet and the appropriate mega macs X in workshops with several mega macs X, you can identify the appropriate mega macs X with the SDI diagnostic interface under ☰ > **Settings** > **find my mega macs X**. If you push the button then both the Swoosh and the LED light strip on the back of the mega macs X will flash multiple times.		 

Interaction	LED	Swoosh
Put the mega macs X on the charging tray You can put the mega macs X in either switched on or switched off state on the charging tray. In both states the mega macs X is charged through the charging tray and remains in the prevailing state. **Explanation of the battery status display:**  **more than 40 % of entire charge** • The battery status indicator flashes green if the battery is being charged.	  	

Interaction	LED	Swoosh
• The status indicator is permanently green if the battery is fully charged.  **20 % to 40 % of entire charge**  **20 % or less (charging required!)** • The battery status indicator flashes red if battery charge is less than 10 %.		
Connect the mega macs X with vehicle's diagnostic connection If the mega macs X is switched off and you insert the OBD plug in the vehicle's diagnostic connection, the mega macs X will switch on automatically(precondition: sufficient vehicle electrical system voltage). The LED indicates the state of charge of the vehicle battery. It can be green, yellow or red. The threshold values are: • red: <11.5 V • yellow: 11.5 - 11.9 V • green: >12 V	  	
Connect external device via USB with the mega macs X If the mega macs X is switched on and you connect an external device via USB to the mega macs X, the Swoosh will light up for approx. 0.2 seconds. If the mega macs X is switched off and you establish a connection, the mega macs X will not react.		

5. Installation of the HGS PassThru Software

5.1. Provision of HGS PassThru

Since 2010, the Euro 5 standard has been applicable for all new vehicles. It regulates, among other things, the type-approval of vehicles with regard to emissions. With the Euro 5 standard, manufacturers are obligated to provide independent repairers with unrestricted Internet access to all information relating to the maintenance and repair of the vehicles.

Only Euro 5-capable devices may be used to to program the ECUs. **HGS PassThru** is an interface used to install the latest software version from the online portal of the manufacturer on the vehicle ECU. The PassThru function is an add-on and does *not* replace the diagnostic procedure. Here, **Hella Gutmann** establishes a direct communication between the manufacturer's OEM server (Original Equipment Manufacturer) and the vehicle.

Provision of the software varies depending on the manufacturer. The following options are available:

- Download the PC software
- Request the PC software on CD or DVD
- Online solutions

Here charges may accrue depending on the manufacturer e.g. for:

- Registration
- Licenses
- Software

The software content (scope of information and function) varies depending on the manufacturer. Some manufacturers provide the legally required functions and information only, whereas others provide additional data.

5.2. System Requirements for HGS PassThru

Hella Gutmann demands the following requirements for the installation of HGS PassThru:

- at least Microsoft Windows 10 (32/64 bits) or higher
- at least 2 GB free internal memory
- at least 40 GB free hard disc space
- at least 1 free 2.0 USB port on the laptop/tablet
- web-compatible laptop or tablet

5.3. Installation of the HGS PassThru Software

An installation wizard guides you through the necessary installation steps.

Proceed as follows to install the **HGS PassThru** software:

1. Switch on the laptop/tablet.

2. Call up the website of **Hella Gutmann**.
3. Select **FOR WORKSHOPS** > **SUPPORT & INFORMATION** > **PassThru**.
4. Select the tab **>DOWNLOADS<**.
5. Click to **>Software – PassThru<**.
   ⇨ The window **HGS PassThru Setup** is displayed.
6. Save the PassThru setup.exe with **>Save file<**.
   ⇨ A target directory is suggested for the files of the PassThru setup.exe. If you wish to have another target directory then select a suitable directory. At the end of installation, the files will be copied into the selected target directory.
7. Save the PassThru setup.exe with **>Save<**.
   ⇨ The PassThru setup.exe will be saved in the target directory.
8. Click the PassThru setup.exe in the target directory.
   ⇨ The window **HGS PassThru Setup** is displayed.
9. Select the requested language with ▼.
10. Confirm the selection with **>OK<**.
    ⇨ The selection will be saved automatically. The setup wizard of **HGS PassThru** is displayed.
11. Click **>Next<**.
    ⇨ The general terms and conditions (GTCs) appear.
12. Read the GTCs and confirm them at the end of the text.
13. Click **>Next<**.
    ⇨ Select a product to be able to install the HGS PassThru Setup software successfully.
14. Select **>mega macs X<**.
15. Install the product with **>Install<**.
    ⇨ Installation is started.
16. Wait until installation is finished.
17. Click to **>Finish<**.
    ⇨ A link to **HGS PassThru** will be automatically created on the desktop.

⇨ Installation of the software is hence finished.

6. Initial Start-Up of the HGS PassThru Software

This section describes how the **HGS PassThru** software is used.

6.1. Preconditions for Initial Start-Up of HGS PassThru

- Voltage supply of diagnostic device and laptop or tablet through mains supply and mains cable is ensured.
- Laptop or tablet is booted.
- Laptop or tablet available for connecting vehicle to the Internet.
- **HGS PassThru** file correctly installed on laptop or tablet.
- Admin rights available.
- Latest Java version installed.
- Stable Internet connection present
- All processes/programs that have been started or are running in the background are closed.

6.2. Running the HGS PassThru Software

⚠ CAUTION!

Pay attention that the voltage supply during the entire procedure is not lower than 12 V.

A voltage drop may lead to the abortion of the download and the ECU may be damaged.

The old software version of the ECU *cannot* be re-established if an update is intended.

NOTICE

No other functions can be executed with the mega macs X while the PassThru procedure is in progress.

Proceed as follows to run the **HGS Pass Thru** software:

1. Switch on the mega macs X.
2. Activate the Pass Thru function under **Settings** > **User profile** > **Miscellaneous**.
3. Connect the USB cable to the USB port of the mega macs X.

⚠ CAUTION!

Rolling of vehicle

Risk of injury or material damages

Proceed as follows before startup:

1. Apply the parking brake.
2. No gear is engaged.
3. Regard the window with information and instructions.

NOTICE

Danger of short circuit and voltage peaks when connecting the OBD plug

Danger of destruction of automotive electronics

Switch off ignition before connecting the OBD plug to the vehicle.

4. Plug in the OBD plug in the vehicle's diagnostic connector.
5. Insert the USB cable into the USB port of the laptop/tablet.
   ⇨ Connection is going to be established. The laptop/tablet is connected to the vehicle.
   ⇨ The PassThru function is active.
6. Switch on the vehicle ignition.
7. Observe the manufacturer's specifications.
8. Select the HGS PassThru shortcut on the desktop.
9. Select the requested language.
10. Call up the requested manufacturer web site online with the laptop/tablet.
11. Follow the instructions on the manufacturer portal.
12. Select PassThru of **Hella Gutmann**.

7. Putting the mega macs X into Operation

7.1. First use with the Hella Gutmann Tablet

NOTICE

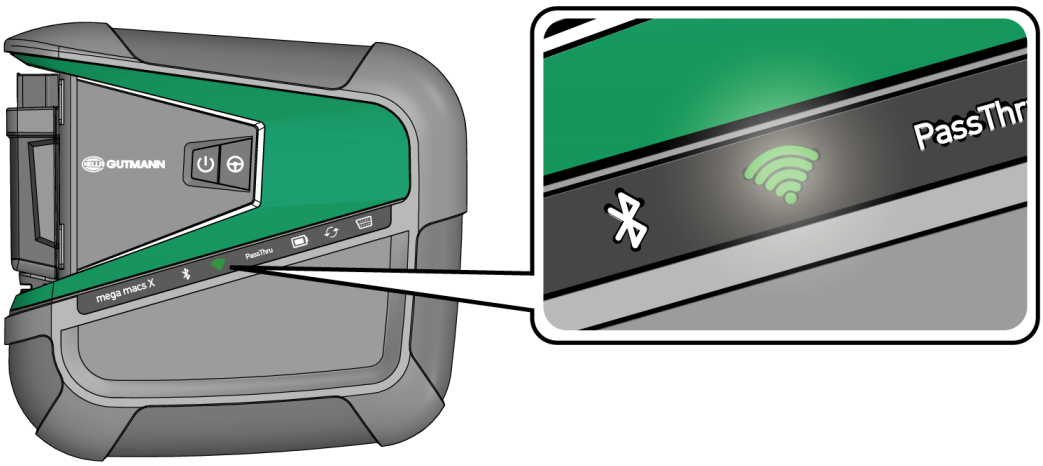
When starting the device for the first time and after every software update, you need to confirm the general terms and conditions (GTC) of the **Hella Gutmann Solutions GmbH**. Otherwise, certain device functions will be unavailable.

Proceed as follows to take the mega macs X into operation for the first time with the Hella Gutmann Tablet:

NOTICE

In *diesem Video* you will find instructions how to connect the mega macs X to different display units.

1. Switch on the mega macs X.
2. Switch on the Hella Gutmann Tablet.
3. Wait until the Wi-Fi indicator at the mega macs X is permanently green.

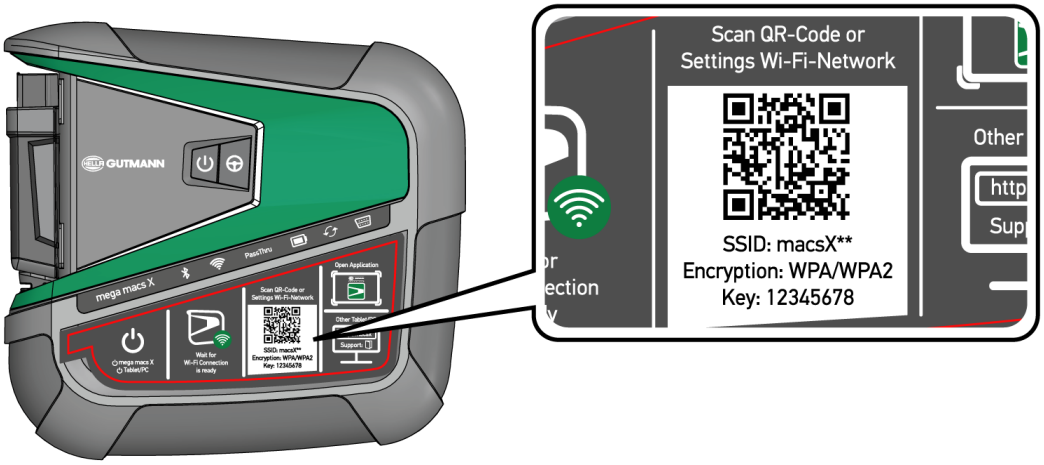


⇨ The HGS setup on the Hella Gutmann Tablet will start automatically and guides you through the initial setup.

NOTICE

The HGS setup changes the languages every 3 seconds.

4. Select the language.
5. Select the country.
6. Scan the QR code on the housing of the mega macs X.



⇨ Connection to the mega macs X will be established if the QR code is registered.

⇨ The SDI setup will start automatically in the next step to activate the mega macs X.

7. Select the Wi-Fi network (of the workshop).
8. Regard the window with information and instructions.

   ⇨ The LED progress bar flashes during connection setup.

   ⇨ Once the Wi-Fi connection is established, the message **Wi-Fi connection has been successfully established** is displayed.
9. Select **>OK<**.
10. Select **>Continue<**.
11. Please enter the activation code and select **>Continue<**.

NOTICE

The activation code is going to be sent by e-mail in advance.

12. Confirm the successful activation of the mega macs X with **>Continue<**.
13. Enter the company data and confirm with **>Continue<**.
14. Add a printer.
15. Confirm your selection with **>Continue<**.
16. Call up the SDI diagnostic interface with .

NOTICE

The following cases require a prior license activation to be able to use requested functions of the mega macs X:

- Purchased device (cash purchase)

- Flexible leasing

Proceed as follows to activate a requested license in **macs365**:

Step 1:

Select **>Manage licenses in macs365<** or open page *http://www.macs365.com/de/login* in your Internet browser.

Step 2:

Enter the log-in data. The log-in data is going to be sent by e-mail in advance.

Step 3:

Select the device.

Step 4:

Select the requested license.

Step 5:

Activate the requested license under **>Activate license<**.

Step 6:

Select the method of payment.

Step 7:

Select **>Send order<**.

Now you can use the requested functions of the mega macs X.

NOTICE

Should you wish to take another mega macs X into operation you can call up the HGS setup again with  in the App **mega macs X [Setup]**.

The HGS setup on the Hella Gutmann Tablet will start automatically and guides you through the initial setup.

⇨ After having completed the installation process you can start the mega macs X through the shortcut on the start screen  .

7.2. First Use with an Independent Displaying Device

NOTICE

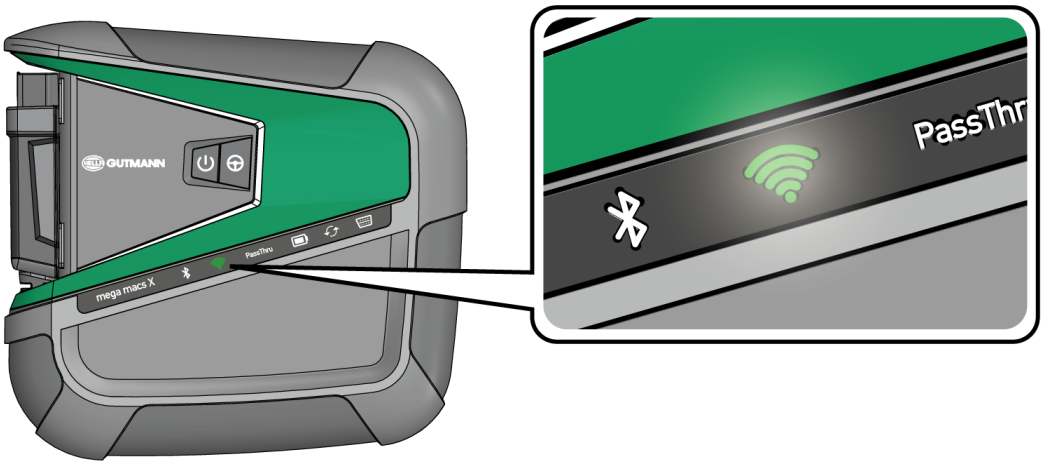
When starting the device for the first time and after every software update, you need to confirm the general terms and conditions (GTC) of the **Hella Gutmann Solutions GmbH**. Otherwise, certain device functions will be unavailable.

Proceed as follows to take the mega macs X into operation for the first time with an independent displaying device:

NOTICE

In *diesem Video* you will find instructions how to connect the mega macs X to different display units.

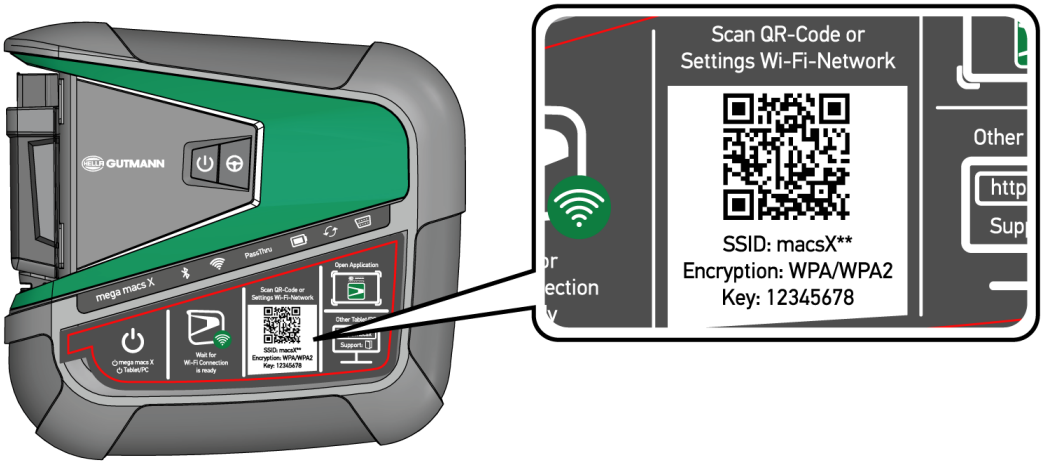
1. Switch on the mega macs X.
2. Switch on the independent displaying device (e.g. tablet or notebook).
3. Wait until the Wi-Fi indicator at the mega macs X is permanently green.



4. Establish the Wi-Fi connection (**with QR code** or **manually**) and call up the SDI diagnostic interface.
   ⇨ The two connecting possibilities are described below:

Establish the Wi-Fi connection and call up the SDI diagnostic interface – with QR code:

1. Scan the QR code on the housing of the mega macs X.



⇨ The Wi-Fi settings are indicated on the displaying device.

2. Confirm the indicated selection and connect with the mega macs X Wi-Fi.

⇨ Now the mega macs X is connected with the displaying device.

3. Scan the following QR code once to open the SDI diagnostic interface in a web browser:

NOTICE

It is recommended to use Google Chrome with version 78 or higher in connection with either Android or Windows operating system.

The latest version of Safari web browser is presumed when using iOS.

⇨ The web page *http://macsx* is going to be called up automatically.

4. The SDI setup will start automatically in the next step to activate the mega macs X.
5. Select the Wi-Fi network (of the workshop).

⇨ The LED progress bar flashes during connection setup.

⇨ Once the Wi-Fi connection is established, the message **Wi-Fi connection has been successfully established** is displayed.

6. Select **>OK<**.
7. Select **>Continue<**.
8. Please enter the activation code and select **>Continue<**.

NOTICE

The activation code is going to be sent by e-mail in advance.

9. Confirm the successful activation of the mega macs X with **>Continue<**.
10. Enter the company data and confirm with **>Continue<**.
11. Add a printer.
12. Call up the SDI diagnostic interface with .

NOTICE

The following cases require a prior license activation to be able to use requested functions of the mega macs X:

- Purchased device (cash purchase)

- Flexible leasing

Proceed as follows to activate a requested license in **macs365**:

Step 1:

Select **>Manage licenses in macs365<** or open page *http://www.macs365.com/de/login* in your Internet browser.

Step 2:

Enter the log-in data. The log-in data is going to be sent by e-mail in advance.

Step 3:

Select the device.

Step 4:

Select the requested license.

Step 5:

Activate the requested license under **>Activate license<**.

Step 6:

Select the method of payment.

Step 7:

Select **>Send order<**.

Now you can use the requested functions of the mega macs X.

NOTICE

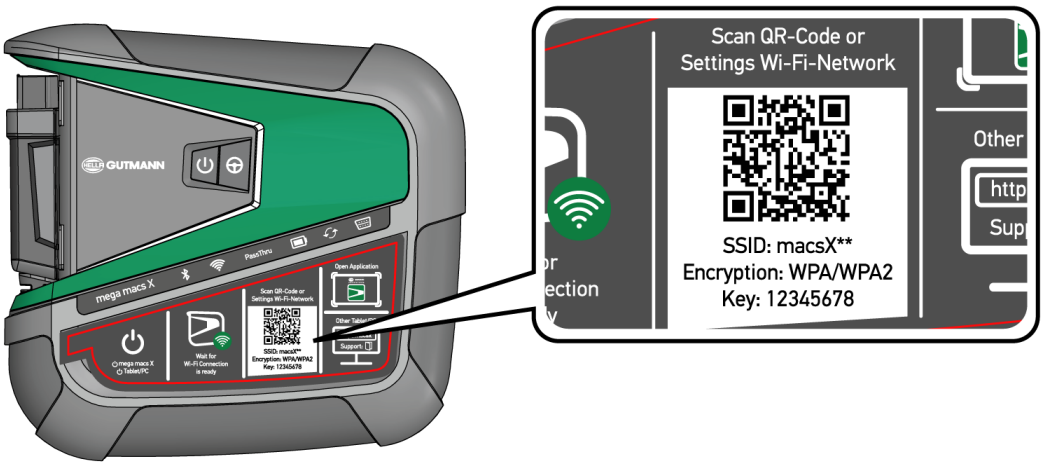
It is recommended to add a shortcut of the mega macs X setup on the start screen once. Hence you do not need to manually enter the address *http://macsx (http://macsx.local* or *http://192.168.4.1* in the browser every time you set up the connection to the mega macs X.

Perform the steps as described in section Creating a Shortcut [▶ 35] to add the setup of the mega macs X to the start screen.

⇨ After having completed the installation process you can start the mega macs X through the shortcut on the start screen.

Establish the Wi-Fi connection and call up the SDI diagnostic interface – manually:

1. Start a manual search for Wi-Fi through the displaying device.
2. Select the SSID **macsx**** (** marks the device number).
3. Enter the Wi-Fi password (key) and connect to Wi-Fi.



NOTICE

The Wi-Fi password (key) is additionally written on the type label at the back of the mega macs X.

4. Open the web browser and enter the following address in the address bar: *http://macsx.*

NOTICE

Should you use a displaying device with Windows operating system, then enter the address *http://macsx.local* or *http://192.168.4.1* in the address bar.

Connection cannot be established if **http://** is not entered.

5. The SDI setup will start automatically in the next step to activate the mega macs X.
6. Select the Wi-Fi network.

7. Regard the window with information and instructions.
   ⇨ The LED progress bar flashes during connection setup.
   ⇨ Once the Wi-Fi connection is established, the message **Wi-Fi connection has been successfully established** is displayed.
8. Select **>OK<**.
9. Select **>Continue<**.
10. Please enter the activation code and select **>Continue<**.

NOTICE

The activation code is going to be sent by e-mail in advance.

11. Confirm the successful activation of the mega macs X with **>Continue<**.
12. Enter the company data and confirm with **>Continue<**.
13. Add a printer.
14. Confirm your selection with **>Continue<**.
15. Call up the SDI diagnostic interface with .

NOTICE

The following cases require a prior license activation to be able to use requested functions of the mega macs X:

- Purchased device (cash purchase)

- Flexible leasing

Proceed as follows to activate a requested license in **macs365**:

Step 1:

Select **>Manage licenses in macs365<** or open page *http://www.macs365.com/de/login* in your Internet browser.

Step 2:

Enter the log-in data. The log-in data is going to be sent by e-mail in advance.

Step 3:

Select the device.

Step 4:

Select the requested license.

Step 5:

Activate the requested license under **>Activate license<**.

Step 6:

Select the method of payment.

Step 7:

Select **>Send order<**.

Now you can use the requested functions of the mega macs X.

NOTICE

It is recommended to add a shortcut of the mega macs X setup on the start screen once. Hence you do not need to manually enter the address *http://macsx (http://macsx.local* or *http://192.168.4.1* in the browser every time you set up the connection to the mega macs X.

Perform the steps as described in section Creating a Shortcut [▶ 35] to add the setup of the mega macs X to the start screen.

⇨ After having completed the installation process you can start the mega macs X through the shortcut on the start screen.

7.3. Creating a Shortcut

Proceed as follows to add the mega macs X setup to the start screen:

Example for Android > 9.0 (Google Chrome, Version 78 or higher):

1. Call up the web site *http://macsx*.
2. Click to the button with the three dots ⋮.
3. Select **>Add to start screen<**.
4. Enter a name for the shortcut (example: **mega macs X**) and tip **>Create<**.

Example for iOS:

1. Call up the web site *http://macsx* in Safari.
2. Tip to the Share icon ⎙.
3. Select **>To home screen<**.
4. Enter a name for the shortcut (example: **mega macs X**) and tip to **>Add<**.

Example for Windows (Google Chrome, Microsoft Edge etc.):

1. Set the size of the browser window in a way that both the web site and the start screen is displayed.
2. Click to the entered address (*http://macsx.local* or *http://192.168.4.1*) in the address bar of the web browser and keep the button clicked.
3. Draw the mouse pointer with pressed mouse button on your start screen.
4. Release the mouse button to create the shortcut.
5. Enter a name for the shortcut with **>Right click<** > **>Rename<** (example: **mega macs X**).

7.4. Charging the Battery with the Power Adapter

Proceed as follows to charge the battery with the power adapter:

1. Connect the power supply plug into the socket of the mega macs X.
2. Plug in the power plug into the socket.

   ⇨ The battery is being charged.

7.5. Charging the Battery with the Charging Tray

Proceed as follows to charge the battery with the charging tray:

NOTICE

Use the charging tray only if it is free of dust and dirt.

1. Insert the voltage supply plug into the socket of the charging tray.
2. Plug in the power plug into the socket.
3. Place the mega macs X onto the charging tray.
   ⇨ The battery is being charged.

7.6. Charging the Hella Gutmann Tablet with the Docking Station

Proceed as follows to charge the battery of the Hella Gutmann Tablet through the docking station:

1. Insert the voltage supply plug into the docking station port.
2. Plug in the power plug into the socket.
3. Place the Hella Gutmann Tablet onto the docking station.
   ⇨ The battery is being charged.
   ⇨ The **DisplayLink Presenter** window is displayed.

NOTICE

With the DisplayLink Presenter you can transmit the screen of the Hella Gutmann Tablet to a connected external device (such as monitor or beamer). The notice language changes every 3 seconds.

4. Regard the notice.
5. Activate the checkbox to transmit the screen of the Hella Gutmann Tablet to an external device every time the device is connected to the docking station.
6. Confirm the selection once with **>OK<**.

8. Configuring the mega macs X

Configure all interfaces and functions under ☰ >**Settings**.

8.1. Setting company data

Enter the company data that shall appear on the hard-copy printout, e.g.:

- Company address
- Fax number
- Homepage

8.1.1. Entering Company Data

Proceed as follows to enter the company data:

1. Select ☰ > **Settings** > **User profile** > **Company data**.
2. Enter the company name in the text field under **Company name**.
3. Repeat step 2 to make further entries.
   ⇨ The input will be saved automatically.

8.2. Installing Password Protection

The introduction of the General Data Protection Regulation (GDPR) of the European Union which came into force on 25 May 2018 includes the requirement to ensure better protection for customer-related data in devices.

To prevent access to our diagnostic devices by third parties, we have integrated the function **Password protection**.

NOTICE

Due to legal requirements concerning third party access, the diagnostic device can only be reactivated via the function **>Starting the factory reset<** or the Technical Hotline of Hella-Gutmann Solutions. In this case the personal data and the Car History will be cleared and might possibly not be restored.

Proceed as follows to set up the password protection:

1. Select ☰ > **Settings** > **User profile** > **Password protection**.
2. Enter a password in the text field under **Password**.
3. Confirm your entry under **Repeat password**.
4. Observe the warning notice and confirm.

⇨ You can now access the diagnostic device only with the selected password.

8.3. Configuring the Car History

8.3.1. Sending the Car History

Here you can send the Car History to Hella Gutmann.

Proceed as follows to send the Car History data:

1. Select ☰ > **Settings** > **Device** > **Car History**.
2. Click to **>Send Car History<**.
   ⇨ The Car History is being sent to Hella Gutmann.

8.3.2. Recovering the Car History from a Cloud

NOTICE

In case of service this function enables the recovery of the Car History data on the diagnostic device used.

Proceed as follows to recover the Car History from the cloud:

1. Select ☰ > **Settings** > **Device** > **Car History**.
2. Click to **>Recover Car History from the Cloud<**.
   ⇨ The window **Recover Car History from the Cloud** is displayed.
3. Click to **>Yes<**.
   ⇨ All the Car History data will be recovered.
   ⇨ The message **Car History successfully loaded** is displayed if the Car History has been successfully recovered from the cloud.

8.3.3. Transferring the Car History from Old Device

Here you can transfer the Car History from an old device to the currently used diagnostic device.

Proceed as follows to transfer the Car History from an old device:

NOTICE

Precondition for the Car History transfer from old device to a new one is that the old device is registered under the same customer number.

1. Select ☰ > **Settings** > **Device** > **Car History**.
2. Click to **>Transfer the Car History to this device<**.
3. Select the formerly used diagnostic device for the transfer.

⇨ Now the Car History data is being transferred from the formerly used device to the currently used diagnostic device.

8.4. Cyber Security Management

Several manufacturers use security gateway modules to secure the vehicle communication against unauthorized access. This means that unrestricted vehicle communication between the diagnostic device and the vehicle is possible only through prior activation.

Therefore, the Cyber Security Management (CSM) function has been integrated to ensure unrestricted vehicle communication.

In this case proceed as follows:

1. Create a local user in the diagnostic device.
2. Login of the user is possible as soon as a local user has been created.
3. The different CSM users (e.g. Daimler, FCA) can be registered for this local user after login.
4. In order to get a CSM registration from a manufacturer the user must undergo an identity check by using the IdNow app (for Android and IOs).

The CSM user to be registered must be registered at the manufacturer first. For this the manufacturer demands an identity check done with IDnow.

8.4.1. Log In Local User

Proceed as follows to log in a local user:

1. Select ☰ > **Settings** > **Device** > **User administration**.
2. Select the requested user name.
3. Select **>Login<**.
   ⇨ The **Login** window appears.
4. Select the user name and enter the corresponding password.
5. Select **>Login<**.

⇨ The login of the local user is hence finished.

8.4.2. Create New CSM User

Proceed as follows to create a new CSM user:

1. Select ☰ > **Settings** > **Device** > **User administration**.
2. Select **>Create a user<**.
3. Enter the first name under **First name**.
4. Enter the last name under **Last name**.

5. Enter the desired user name under **User name**.
6. Enter the password under **Password**.

NOTICE

Password must consist of at least 10 characters.

7. Repeat the given password under **Repeat password**.

NOTICE

The local user created first will automatically have admin rights.

8. Select **>Create a user<**.
   ⇨ A new user has been created.

⇨ Go to **>Create a user<** to create another local user.

8.4.3. Log Out Local User

Proceed as follows to log out a registered local user:

1. Select ☰ > **Settings** > **Device** > **User administration**.
2. Select **>Logout<**.

⇨ The local user has been successfully logged out.

8.4.4. Register New CSM User

Proceed as follows to register a new CSM user:

1. Select ☰ > **Settings** > **Device** > **User administration**.
2. Log in a local user.
3. Select **>Register new CSM user<**.
4. Enter the CSM user data.
5. Select **>Register<**.

NOTICE

A verification e-mail will be sent to the specified e-mail address. The verification e-mail contains a token.

6. Enter the token from the verification e-mail.
7. Select **>Verify e-mail address<**.

NOTICE

A further verification e-mail will be sent to the specified e-mail address. The verification e-mail contains an IDnow token.

8. Install the **IDnow app** on the mobile device by using the link specified in the verification e-mail.
9. Open the app and start the identification.
10. Follow the instructions in the app.
11. Select **>Update<** if the verification data has been successfully transferred by the app.
    ⇨ The user has been successfully verified.

⇨ The registration of a new CSM user is hence finished.

8.4.5. Delete Local User

NOTICE

Only administrators are able to delete local users in the device.

Proceed as follows to delete a local user:

1. Select ☰ > **Settings** > **Device** > **User administration**.
2. Log in the user with admin rights.
3. Select the user to be deleted in the user selection menu.
4. Select **>Delete user<**.

⇨ The local user has been deleted.

8.5. Contracts

Here you can call up e.g. the licenses and notes of the programs and functions used by the **Hella Gutmann Solutions GmbH**.

8.5.1. Displaying Licenses

NOTICE

In order to use the full scope of the purchased licenses you need to connect the diagnostic device to the HGS server prior to the first start-up.

Proceed as follows to have indicated the start of contract, the date of purchase and the included and additionally available licenses:

1. Select ☰ > **Settings** > **User profile** > **Contracts**.
2. Select **>My licenses<**.
   ⇨ The window **My licenses** is indicated.

⇨ The start of contract, the date of purchase and the included and additionally available licenses are indicated.

8.5.2. Showing the End User License Agreement

Proceed as follows to view the end user license agreement:

1. Select ☰ > **Settings** > **User profile** > **Contracts**.
2. Select **>End User License Agreement<**.
   ⇨ The GTCs appear.
3. Click **>OK<** to close the window **End User License Agreement**.

8.5.3. Displaying Other Licenses

Here you can view a list of the licenses and notes of the programs and functions used by **Hella Gutmann** (licenses of third-party suppliers).

Proceed as follows to retrieve licenses of third-party suppliers:

1. Select ☰ > **Settings** > **User profile** > **Contracts**.
2. Select **>Licenses from third-party suppliers<**.
   ⇨ A list with the licenses and notes of the programs and functions used by the **Hella Gutmann** appears.
3. Click **>OK<** to close the window **Licenses from third-party suppliers**.

8.6. mega macs X Update

Here you can perform updates of the mega macs X. Various system parameters are also displayed, e.g.:

- Hardware version
- Package version
- Device number

Hella Gutmann Solutions supplies customers with regular software updates. The update is subject to charge. These updates contain new vehicle systems as well as technical modifications and improvements. We recommend keeping your diagnostic device up to date.

8.6.1. Preconditions for an Update

Ensure the following to perform updates:

- The mega macs X is connected to the Internet via LAN or Wi-Fi respectively.
- The corresponding licenses of **Hella Gutmann** are activated.

- The voltage supply of the mega macs X is ensured.

8.6.2. Calling Up System Information

Here you can find all information required for the identification of the **mega macs X**.

Proceed as follows to call up system information:

1. Select ☰ > **Settings** > **Device**.
2. Select the tab **>Version<**.
   ⇨ Here you can find information such as the hardware version, package version and the device number.

8.6.3. Start the update

Here you can start a system update.

Proceed as follows to start the system update:

1. Select ☰ > **Settings** > **Device** > **Version**.
2. Select **>Start update<**.

NOTICE

Insufficient voltage supply / loss of system data

Do not switch off the diagnostic device during the update and do not disconnect it from voltage supply.

Ensure sufficient voltage supply.

   ⇨ The device searches for a new update that will then be downloaded and installed.

⇨ The diagnostic device switches off and on again automatically after the successful system update. The installation will be checked automatically after startup.

8.6.4. Setting Up and Using the asanetwork

NOTICE

Preconditions for the use of the asanetwork function:

The current update is installed on the mega macs X.

The current version of NETMAN is installed in the company network.

The HGS connection manager has established a connection to the network manager.

The asanetwork is set up together with the DMS (dealer management system).

Proceed as follows to set up the asanetwork function:

1. Select ☰ > **Settings** > **Device** > **Order management**.
2. Activate the check box **asanetwork**.
   ⇨ Now the mega macs X is able to retrieve diagnostic orders from the asanetwork.
3. Go to the App launcher and click **>Vehicle selection<**.
4. Select the tab **>asanetwork<**.
5. Retrieve open orders under **>Retrieve order list<**.
   ⇨ Only displays the diagnostic-relevant orders that have been created in the DMS (dealer management system).
6. Selected the requested order.
   ⇨ Possibly confirm a detailed vehicle selection.
   ⇨ The status bar of the the overview of orders now shows the asanetwork symbol and the order number.
7. When you have completed the diagnosis, select and then **>Complete job<** or **>Terminate job<**.

⇨ The order has been sent to the asanetwork.

8.6.5. Performing a Factory Reset

Here you can reset the system to factory settings.

The following data and files will be reset to the state of delivery if you do the factory reset:

- Data stored in the **Car History**
- Downloaded files such as wiring diagrams or service schedules
- User data such as company data

The following functions will be also modified or deleted:

- IP address mode
- Bluetooth® MAC address
- asanetwork
- Display settings
- Confirmation of General terms and conditions
- Printer settings

Proceed as follows to perform a factory reset:

1. Select ☰ > **Settings** > **Device** > **Version**.
2. Click to **>Start factory reset<**.
3. Observe the confirmation prompt.
4. Affirm the confirmation message.
   ⇨ The system will be automatically reset to the state of delivery.

8.7. Configuring interfaces

Here you can set the interfaces for Wi-Fi and Ethernet.

Configure the interfaces for Wi-Fi and Ethernet under ☰ > **Settings** > **Device**.

Configure the interfaces for the printer under ☰ > **Settings** > **Print**.

8.7.1. Configuring Wi-Fi

Make your Wi-Fi settings here.

Wi-Fi is a wireless local area network. Data is transmitted wirelessly via a router and DSL modem (access point). The respective devices register in the Wi-Fi router.

8.7.1.1. Searching and Installing a Wi-Fi Interface

Proceed as follows to connect the diagnostic device to a network (router) through Wi-Fi:

1. Select ☰ > **Settings**.
2. Select **>Device<**.
3. Select **>Wi-Fi<**.
4. Select the check box **Activate Wi-Fi** to view available wireless networks. The available wireless networks are displayed.
   ⇨ The available wireless networks are displayed.
5. Select the requested wireless network.
6. Open the list under **IP address mode** with ⌄.
   ⇨ If **>Determine automatically (DHCP)<** (recommended) is set, the DHCP server of the network will assign an IP address to the mega macs X automatically. This option is set ex works.
   ⇨ If **>Determine manually<** is selected, enter a *free* network IP address, e.g. `192.168.246.002.` under **IP address**.
7. Select **>Determine automatically (DHCP)<** (recommended) or **>Determine manually<**.
   ⇨ The selection will be saved automatically.
8. Enter the Wi-Fi password.
9. Click to **>Connect<**.
   ⇨ The input will be saved automatically.
   ⇨ The name of the selected wireless network is displayed under **Connected wireless network**
   ⇨ Use ⓘ to call up detailed information about the connected wireless network.
10. Once the Wi-Fi symbol appears in the top toolbar, the online connection is set up between diagnostic device and Internet.

⇨ You can use the Wi-Fi connection now.

8.7.1.2. Reset Wi-Fi configuration

You can reset the Wi-Fi configuration if you wish to remove the automatic connection between diagnostic device and already created wireless network.

Proceed as follows to delete all known wireless networks:

1. Select ☰ > **Settings**.
2. Select **>Device<**.
3. Select **>Wi-Fi<**.
4. Select ⓘ.
5. Click to **>Reset Wi-Fi configuration<**.

⇨ The Wi-Fi configuration is reset.

8.7.2. Configuring the Ethernet

Make your network settings here.

Proceed as follows to connect the diagnostic device to a network (router) via Ethernet interface:

1. Plug in the Ethernet cable (not included in delivery contents) in the Ethernet ports of the mega macs X and the Ethernet remote station.
2. Select ☰ > **Settings**.
3. Select **>Device<**.
4. Select **>Ethernet<**.
5. Open the list under **IP address mode** with ⌄.
   ⇨ If **>Determine automatically (DHCP)<** (recommended) is set, the DHCP server of the network will assign an IP address to the mega macs X automatically. This option is set ex works.
   ⇨ If **>Determine manually<** is selected, enter a *free* network IP address, e.g. `192.168.246.002.` under **IP address**.
6. Select **>Determine automatically (DHCP)<** (recommended) or **>Determine manually<**.
7. Click to **>Connect<**.
   ⇨ The selection will be saved automatically.

⇨ You can use the Ethernet connection now.

8.7.3. IP address of PC

Here you can view the IP address of the PC. An internal or rather local IP address clearly identifies a network device with a number within the network. This is necessary to be able to clearly identify the diagnostic device.

Select ☰ > **Settings** > **Device** > **IP address of PC** to view the IP address of the PC.

8.8. Setting the Country

Configure the following data here:

- Time zone
- Language
- Country

8.8.1. Setting the Language

Here you can set the language version if the software is multilingual. After having set the language, the update will be installed in this language.

Proceed as follows to set the language:

1. Select ☰ > **Settings** > **Device** > **Country**.
2. Open the drop-down list under **Language** with ⌄.
   ⇨ The compilation of languages depends on the prevailing software.
3. Select the requested language.

⇨ The selection will be saved automatically.

8.8.2. Making Country Settings

Make your country settings here.

The country version contains certain information, such as the print format for letters.

Proceed as follows to make the country settings:

1. ☰ > **Settings** > **Device** > **Country**
2. Open the drop-down list under **Country** with ⌄.
3. Select the country to the corresponding language.

⇨ The selection will be saved automatically.

8.8.3. Setting the Time Zone

Here you can set the current time zone.

Proceed as follows to set the time zone:

1. Under ☰ > **Settings** > **Device** > **Country**
2. Open the drop-down list under **Time zone** with ⌄.
3. Select the required time zone.

⇨ If you have selected a time zone, the date and time is set automatically.

⇨ The selection will be saved automatically.

8.9. Configuring Other Matters

8.9.1. Activating the Demo Mode

Here you can set whether the device shall give predetermined values during the vehicle communication. This setting is mainly intended for marketing and sales presentations.

NOTICE

In the course of vehicle diagnostics the demo mode must be switched off. Otherwise the device will deliver predetermined diagnostic results and no real values.

Proceed as follows to activate the demo mode:

1. Select ☰ > **Settings** > **User profile** > **Miscellaneous**.
2. Activate the check box **Demo mode**.

⇨ Demo mode is switched on.

8.9.2. Activating the Expert Mode

Here you can activate additional buttons which shall help solving potential troubles together with the Technical Help Line.

Proceed as follows to activate the expert mode:

1. Select ☰ > **Settings** > **User profile** > **Miscellaneous**.
2. Activate the check box **Expert mode**.

⇨ Now the expert mode is active.

8.10. Configuring the printer

View the *Video* here.

8.10.1. Search for a printer

Here you can set the print function with the standard printer connected to the PC.

If there is no additional printer connected to the mega macs X, it is possible to print with the printer of a PC system. This requires a connection between the mega macs X and the PC. The connection to the PC can be realized with USB port or Wi-Fi.

Proceed as follows to print with the standard printer of a PC:

1. Select ☰ > **Settings** > **Print**.
2. Open the drop-down list under **Interface** with ⌄.
3. Select **>PC<**.
4. Click to **>Search for a printer<**.
   ⇨ The diagnostic device searches for available printers.
5. Selected the requested printer.
   ⇨ The selection will be saved automatically.

⇨ Now you can start printing via PC.

8.10.2. Add printer

NOTICE

This selection requires professional knowledge about PC systems must be configured exclusively by an IT system administrator.

Use the menu **>Add printer<** to configure the printer interfaces manually.

It is possible to connect to the USB ports of the mega macs X any printer that supports at least the printer language PCL5 or higher and that has a USB port. In order to ensure trouble-free support through the Technical Help Line, we recommend using a printer of Hella Gutmann.

Proceed as follows to add a printer:

1. Select ☰ > **Settings** > **Print**.
2. Click to **>Add printer<**.
3. Now you can enter e.g. **Printer name**, **Printer path** and **Manufacturer** manually.
4. Confirm the selection with **>Add printer<**.

⇨ The selection will be saved automatically.

8.10.3. Print a test page

Here you can print out a test page.

Proceed as follows to print out a test page:

1. Select ☰ > **Settings** > **Print**.
2. Click to **>Print a test page<**.
   ⇨ Print data are being edited.

⇨ A test page will be printed out by the printer set previously.

8.11. Calling Up Battery Information

Call up e.g. the following information about the battery under ☰ > **Settings** > **Battery**:

- Serial number
- Status
- Battery state of charge (%)
- Battery temperature (°C)
- Charging cycles

9. Working with the mega macs X

9.1. Symbols

9.1.1. Symbols in the Header

Symbols	Name
	**Battery state of charge incorrect** This symbol indicates a faulty battery state of charge.
	**Battery state of charge unknown** This symbol indicates that the battery state of charge is unknown.
	**Battery charges** This symbol indicates that the battery is being charged.
   	**Battery state of charge:** These symbols indicate the various battery charging states.
	**Bluetooth® not connected** This symbol indicates that the diagnostic device has no Bluetooth® connection.
	**Connecting through Bluetooth®** This symbol indicates that the diagnostic device is establishing a Bluetooth® connection.

Symbols	Name
	**Bluetooth® connected** This symbol indicates that the diagnostic device has established a Bluetooth® connection.
	**Vehicle connected** This symbol indicates that the vehicle is connected to the diagnostic device via OBD plug.
	**Connection to HGS server** This symbol indicates that the diagnostic device is connected to the HGS server.
	**Home** Call up the vehicle selection list with this symbol. After having selected a vehicle use this symbol to get an overview of relevant information, e.g.: • Diagnostic connector inside cabin • Recall campaigns
	**Vehicle Information** Use this symbol to call up additional information about the selected vehicle. You need to select a vehicle for this indication.
	**Menu** Use this symbol to call up the following functions: • Settings • Messages • Screenshot
	**Search for terms** Use this symbol to search for components in different types of data records in the search bar (e.g. wiring diagrams, component location or component test values). A vehicle needs to be selected for the search.
  	**Wi-Fi signal strength** These symbols indicate the different Wi-Fi signal strength values and hence the quality of the Wi-Fi connection.

Symbols	Name
	**Wi-Fi deactivated** This symbol indicates that the Wi-Fi interface is deactivated and no Wi-Fi connection is present.

9.1.2. General Symbols

Symbols	Name
	**Report feedback** Use this symbol to report a general feedback, wrong data or missing data. These feedbacks are processed by the Technical Help Line.
	**Hide App launcher** Use this symbol hide the App launcher.
	**View App launcher** Use this symbol view the App launcher.
	**Close** Use this symbol to close e.g. a function or a menu window.
	**Close info and instructions window** Use this symbol to close an info and instructions window.
	**Calendar** Use this symbol to open the calendar.
	**Open drop-down list** Use this symbol to open a drop-down list.
	**Printer** Use this symbol to call up print options and to print out the current window.
	**Loading image** This symbol indicates that an image is being loaded.

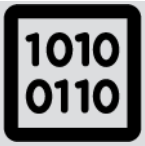
Symbols	Name
	**Zoom in** Zoom in the present view with this symbol.
	**Zoom out** Zoom out of the present view with this symbol.
	**Help** Use this symbol to call up additional information within a function.

9.1.3. Symbols in the Applications Menu

NOTICE

Some symbols become visible only if the application is listed in the favorites bar.

Symbols	Name
	**Vehicle selection** Use this symbol to select a vehicle or to access the Car history.
	**Car history** Use this symbol to call up the Car history.
	**Measuring technology** Use this symbol to call up the measurements function.
	**Trouble code** Use this symbol to read out and delete trouble codes stored in the trouble code memory of the ECU. Information on the trouble code are available too.
	**OBD diagnostics** Use this symbol to start the standardized OBD2 diagnostics through emission-relevant components. Here you select merely the vehicle manufacturer and the fuel type.
	**Parameter** Use this symbol to view the real-time data or conditions of the components from the ECU graphically and alphanumerically.

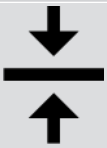
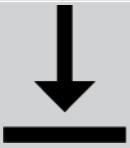
Symbols	Name
	**Actuators** Use this symbol to activate or deactivate actuators with the help of the ECU.
	**Basic setting** Use this symbol to reset components to their basic setting.
	**Coding** Use this symbol to code new components in the ECU.
	**Test function** Use this symbol to perform special tests/self-tests.
	**Service reset** Use this symbol to reset the service interval. Do the service reset either manually or with the diagnostic device.
	**Diagnostic Database** Use this symbol to call up manufacturer-specific and vehicle-specific solutions for various issues. All suggested solutions are from the practice and are retrieved from the Hella Gutmann diagnostics database.
	**Service data** Use this symbol to call up e.g. vehicle-specific service data.
	**Technical data** Use this symbol to call up all the necessary data for service and repair work, e.g.: • Tightening torques • Fluid capacities • Timing marks of crankshaft
	**Cabin air filter** Use this symbol to call up removal and installation instructions for the cabin air filter.
	**Timing belt data** Use this symbol to call up removal and installation instructions for timing belts and timing chains.
	**Repair instructions** Use this symbol to call up instructions for different types of repair work.

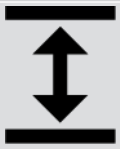
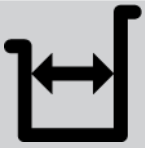
Symbols	Name
	**Wiring diagrams** Use this symbol to call up wiring diagrams of different vehicle systems, e.g.: • Engine • ABS • Airbag • Comfort
	**Fuses/relays** Use this symbol to call up the installation position and function of fuses and relays.
	**Component test values** Use this symbol to view the following information, e.g.: • ECU plug • Pin assignment • Signal graphs • Nominal values
	**Diesel systems** Use this symbol to call up systematic images of the injection system and exhaust gas aftertreatment.
	**Component location** This symbol indicates the component location.
	**Battery management** Use this symbol to call up removal and installation instructions as well as general information on the battery.
	**Flat rate units** Use this symbol to call up the flat rate units determined by the manufacturer for various work processes on the vehicle.
	**Service information** Use this symbol to call up important information about certain service work such as: • Towing a vehicle • Lifting the vehicle • Emergency release of electric parking brake

Symbols	Name
	**Manufacturer campaigns** Use this symbol to call up vehicle-specific manufacturer campaigns.
	**Recall campaigns** Use this symbol to call up recall campaigns of manufacturers and importers.
	**Add parameter** Use this symbol to add a parameter under **>Parameters<**.
	**Parameter added** This symbol indicates that a parameter has been added under **>Parameters<**.
	**Remove parameter** Use this symbol to remove selected parameters under **>Parameters<**.
	**Add data selection/symptom** Use this symbol to add a data selection/a symptom under **>New help call<**.
	**Delete data selection/symptom** Use this symbol to delete a data selection/a symptom under **>New help call<**.
	**Indicate selected components** Use this symbol to indicate selected components under **>Wiring diagrams<**, **>Fuses/relays<** and **>Diesel systems<**.
	**Hide selected components** Use this symbol to hide selected components under **>Wiring diagrams<**, **>Fuses/relays<** and **>Diesel systems<**.
	**Call up linked work steps** Use this symbol to call up linked work steps under **>Flat rate units<**.
	**Call up additional information** Use this symbol to call up additional information under **>Technical data<**.
	**Figure tab** This symbol under **>Technical data<** and **>Service information<** the tab **>Images<**. These images are a graphical supplement to the additional information called up.

Symbols	Name
	**Read out the VIN** Use this symbol to read out the VIN and to select the vehicle from the vehicle database under **Vehicle selection** > **Vehicle search**.
	**Status subsystem not available** This symbol indicates that the statusof the subsystem is not available under **>Trouble codes<**.
	**Move the viewing position** Use the arrows to move the viewing position of the images to the left or right or to the top or bottom.
	**Original view** Use this symbol to change to the original image view.
	**Confirm** Perform functions such as the following with this symbol: • Start the selected function. • Confirm the present entry. • Confirm your menu selection.
	**Task list corrected** This symbol indicates a corrected task list under **>Service data<**.
	**Delete** Use this symbol to delete vehicle entries under **>Car History<**, help calls under **>New help call<** and trouble codes under **>Trouble codes<**.
	**Write message** Use this symbol to send a written request or message of any kind (e.g. help call) to the Hella Gutmann support of Hella Gutmann.

Symbols	Name
	**Help call sent** This symbol under **Vehicle selection** > **Car History** indicates that a help call has been sent.
	**Help call still not read** This symbol under **Vehicle selection** >**Car History** indicates that help calls are present which have not been read yet.
	**Help call read** This symbol under **Vehicle selection** > **Car History** indicates that a help call has been read.
	**e-Mobility** Use this symbol to call up additional information about electric vehicles.
	**Additional information** Use this symbol to view additional information under **>Parameters<**, vehicle information under **>Vehicle selection<** and component information under **>Component test values<**.
	**ADAS Advanced Driver Assistance Systems** Use this symbol to view information about the advanced driver assistance systems of the selected vehicle.
	**Adaptive lighting systems** Use this symbol to view information about the adaptive lighting systems of the selected vehicle.
	**Expert functions in trouble codes** Use this symbol to preselect and assign e.g. drivers or trouble codes under **>Trouble codes<**. The expert mode must be activated and an assembly must be opened in order to use the expert function.
	**Start request** Use this symbol to start a request under **>Trouble codes<**.
	**Faults in trouble codes** This symbol indicates a faulty status under **>Trouble codes<**.
	**Show password**
	**Hide password**

Symbols	Name
	**Vehicle search** Use this symbol to search for a vehicle e.g. through VIN, manufacturer key no. or its HGS registration number.
	**Settings** Use this symbol to configure the device.
	**NOTE** This symbol indicates that steps/actions are highlighted here to which special attention must be paid when performing work tasks (e.g. recall campaigns).
	**Direct current voltage**
	**Alternating voltage**
	**Start the measurement** Use this symbol to start a measurement under **>Measurements<**.
	**Pause** Use this symbol to stop the current measurement under **>Measurements<**.
	**Auto Set** Use this symbol to automatically set the measuring range under **>Measurements<**.
	**Measurements settings** Use this symbol to take various settings for signal acquisition and the output of values under **>Measurements<**.
	**General settings** Use this symbol to open general functions/settings under **>Measurements<**.
	**Trigger settings** Use this symbol to open trigger setting functions under **>Measurements<**.
	**Measurement settings** Use this symbol to open various settings for the measurement under **>Measurements<**.
	**Minimum value** Use this symbol to view the minimum value of the entire measurement sequence under **>Measurements<**.

Symbols	Name
	**Maximum value** Use this symbol to view the maximum value of the entire measurement sequence under **>Measurements<**.
	**Measured variables** This symbol marks the measured variables under **>Measurements<**.
	**Measured value** Use this symbol to view the currently measured value under **>Measurements<**.
	**Period duration** Use this symbol to view the duration of one signal period under **>Measurements<**.
	**Duty cycle** Use this symbol to view the percental relation (duty cycle) of the time the signal is switched on and switched off under **>Measurements<**. One signal period is 100 %. This indication mode is suitable for square wave signals only.
	**Frequency** Use this symbol to view the signal frequency under **>Measurements<**.
	**Peak-to-peak value** Use this symbol to view the maximum distance between the upper and lower signal peak of the entire measurement sequence under **>Measurements<**.
	**Lower pulse width (-)** Use this symbol to view the duration of the lower signal amplitude under **>Measurements<**.
	**Upper pulse width (+)** Use this symbol to view the duration of the upper signal amplitude under **>Measurements<**.
	**Zero reset** Use this symbol to place the voltage curve on the zero line under **>Measurements<**. In this way, you can compensate for interference voltages and measuring range tolerances.
	**Reset zoom** Use this symbol to reset the zoomed view during the measurement process under **>Measurements<**.
	**Guided measurement** Use this symbol to start a guided measurement under **>Measurements<**.

Symbols	Name
	In addition to the actual measurement, the Guided measurements menu contains the following help functions depending on the selected measurement: • Connection help • Pre-defined measuring range settings • Nominal signal values for repair
	**Warning notice** This symbol marks a warning notice under **>Measurements<**.

9.2. Car history

Here the diagnostic results about the current vehicle are saved from the steps **>Trouble codes<**, **>Parameters<**, **>Basic setting<**, **>Codings<**, **>Measurement<** and **>Guided measurement<**. This has the following advantages:

- You can evaluate the diagnostic results later.
- Compare previously performed diagnostics to present diagnostic results.
- You can show the customer the diagnostic results without needing to reconnect the vehicle.

9.3. Vehicle selection

Here you can select vehicles according to the following parameters:

- Vehicle type
- Manufacturer
- Model
- Fuel type

NOTICE

To be able to access all the available information, you must have an internet connection.

There are various options to select a vehicle in the App launcher under **>Vehicle selection<**. The following options are available:

- **Vehicle search**

  You can search for the vehicle e.g. using the following parameters:

  – Country-specific
  – VIN
  – HGS no.

NOTICE

The country-specific vehicle search is only possible in the following countries:

- Germany (Manufacturer key no./German type variant version code)
- Netherlands (license number)
- Sweden (license number)
- Switzerland (type approval number)
- Denmark (license number)
- Austria (national code)
- Ireland (license number)
- Norway (license number)
- France (license number)
- Finland (license number)

NOTICE

Searching a vehicle by its VIN is not possible for every manufacturer.

- **Vehicle database**

  Here you can search for the vehicle e.g. using the following parameters:

  – Manufacturer
  – Fuel type
  – Model

- **Car history**

  Here you can select already saved vehicles and diagnostic results.

9.3.1. CSM Vehicle Selection

NOTICE

These steps are necessary only if no CSM user has been registered before.

Proceed as follows to be able to select a vehicle with installed security system and to use the usual diagnostic processes without restrictions:

1. Click to **>Vehicle selection<** in the App launcher and select the requested vehicle.

⚠ CAUTION!

Rolling of vehicle

Risk of injury or material damages

Proceed as follows before startup:

1. Apply the parking brake.
2. No gear is engaged.
3. Regard the window with information and instructions.

NOTICE

Danger of short circuit and voltage peaks when connecting the OBD plug

Danger of destruction of automotive electronics

Switch off ignition before connecting the OBD plug to the vehicle.

2. Plug in the OBD plug in the vehicle's diagnostic connector.
3. Regard the window with information and instructions.
4. Close the info and instructions window.
5. Select the requested diagnostic type (e.g. **>Service reset<**) in the App launcher.
   ⇨ The **Login** window appears.
6. Enter the CSM user data and select **>Login<**.
7. Confirm the user identification with **>Confirm<**.

⇨ The entire scope of diagnostics is available now.

9.4. Diagnosis

The manufacturer-specific vehicle communication enables the data exchange to the vehicle systems that shall be checked. The prevailing in-depth diagnostics and variety of diagnostics depends on the functional scope of the ECU.

The following parameters are available under **Diagnostics**:

- **>Trouble codes<**

  Here you can read out and delete trouble codes stored in the ECU memory. Information on the trouble code are available too.

- **>OBD diagnostics<**

  Start the OBD2 diagnostics through emission-relevant components here. Here you select merely the vehicle manufacturer and the fuel type.

- **>Parameters<**

Here the device indicates the real-time data or conditions of the components from the ECU graphically and alphanumerically.

- **>Actuators<**

  Here you can activate or deactivate actuators with the help of the ECU.

- **>Basic settings<**

  Here you can reset components to their basic setting.

- **>Codings<**

  Here you can code components in the ECU.

- **>Test function<**

  Here you can perform special tests/self-tests.

- **>Service resets<**

  Here you can reset the service interval. Do the service reset either manually or with the diagnostic device.

9.4.1. Preparing Vehicle Diagnostics

NOTICE

The selection of the correct vehicle and sufficient vehicle electrical system voltage (>12 V) are two basic preconditions for trouble-free vehicle diagnostics. The diagnostic device provides assistance to simplify the selection, e.g. indicating the installation position of the diagnostic port, vehicle identification through VIN or indication of the battery voltage.

Several manufacturers use security gateway modules to protect the vehicle communication against unauthorized access. This means that unrestricted vehicle communication between the diagnostic device and the vehicle is possible only through prior activation. To select and diagnose a vehicle with a security system in the usual manner and without restrictions, follow the steps in the section **Cyber Security Management** of the mega macs X user manual.

The App launcher offers the following ECU functions under **>Diagnostics<**:

- Trouble code
- OBD diagnostics
- Parameter
- Actuators
- Basic setting
- Coding
- Test function
- Service reset

Proceed as follows to prepare vehicle diagnostics:

1. Click to **>Vehicle selection<** in the App launcher and select the requested vehicle.

⚠ CAUTION!

Rolling of vehicle

Risk of injury or material damages

Proceed as follows before startup:

1. Apply the parking brake.

2. No gear is engaged.

3. Regard the window with information and instructions.

NOTICE

Danger of short circuit and voltage peaks when connecting the OBD plug

Danger of destruction of automotive electronics

Switch off ignition before connecting the OBD plug to the vehicle.

2. Plug in the OBD plug in the vehicle's diagnostic connector.
3. Select **>OBD diagnostics<** in the App launcher.

⇨ Now you can select the type of diagnostics.

9.4.2. Trouble code

If a component malfunction is detected while ECU carries out an internal test, a trouble code will be set in memory and the corresponding warning lamp will be activated. The device reads out the fault code and displays it in clear text. It also indicates information about the trouble code, such as possible effects and causes. A link to the measurements is available if measuring is required to detect potential fault reasons.

9.4.2.1. Reading out trouble codes

NOTICE

First select a vehicle before you can read out trouble codes.

For more information about the vehicle selection read the section Vehicle selection [▶ 62] and CSM Vehicle Selection [▶ 63].

⚠ CAUTION!

Rolling of vehicle

Risk of injury or material damages

Proceed as follows before startup:

1. Apply the parking brake.
2. No gear is engaged.
3. Regard the window with information and instructions.

NOTICE

Danger of short circuit and voltage peaks when connecting the OBD plug

Danger of destruction of automotive electronics

Switch off ignition before connecting the OBD plug to the vehicle.

Proceed as follows to read out the trouble codes:

1. Plug in the OBD plug in the vehicle's diagnostic connector.
2. Select **Diagnostics** > **Trouble codes** in the App launcher.
   ⇨ The device gives an overview of the global check.
3. Click to ❯ to open individual systems.
4. Click to ▶ to read out only the selected system.
   ⇨ The window **Prepare vehicle** appears.
5. Observe the info and instruction window.
6. Click **>Next<**.
   ⇨ Communication to vehicle is being established. All trouble codes are displayed which are saved in the ECU.
7. Select the requested trouble code.
   ⇨ The corresponding repair tips are indicated.
8. Use **>Measurements<** to switch directly to the **Measurements** function.

9.4.2.2. Deleting Trouble Codes in Vehicle System

Here you can delete the read-out trouble codes of a vehicle system.

Proceed as follows to delete the trouble codes of a vehicle system:

1. Perform steps 1 to 9 as described in section Reading out trouble codes [▶ 66].

NOTICE

All trouble codes selected will be irrevocably deleted from the ECU memory after the deletion process.

Therefore we recommend saving the read-out data read in the **Car History** at all times.

2. Clear the trouble codes from the vehicle system with **>Delete trouble codes<**.
   ⇨ All trouble codes in the ECU memory will be cleared.

⇨ The message **Trouble code clearing done.** appears if the trouble codes have been cleared successfully.

9.4.2.3. Global Check, Reading Trouble Codes

NOTICE

First select a vehicle before doing any global checks.

For more information about the vehicle selection read the sections Vehicle selection [▶ 62] and CSM vehicle selection [▶ 63].

⚠ CAUTION!

Rolling of vehicle

Risk of injury or material damages

Proceed as follows before startup:

1. Apply the parking brake.

2. No gear is engaged.

3. Regard the window with information and instructions.

NOTICE

Danger of short circuit and voltage peaks when connecting the OBD plug

Danger of destruction of automotive electronics

Switch off ignition before connecting the OBD plug to the vehicle.

The global check scans all ECUs assigned to the vehicle software for stored trouble codes.

Proceed as follows to perform the global check:

1. Plug in the OBD plug in the vehicle's diagnostic connector.
2. Select **Diagnostics** > **Trouble codes** in the App launcher.
3. Go to **Global check** and click to **>Start request<**.

⇨ Communication to vehicle is being established.

⇨ The device requests all possible ECU versions. This may take a few minutes.

⇨ The device indicates all ECUs installed in the vehicle.

⇨ The number of trouble codes in the prevailing ECU memory is indicated.

4. Activate/deactivate the requested ECUs.
5. Call up the requested trouble code under **Faults** in the respective ECU memory.

⇨ The device indicates all trouble codes and repair tips.

9.4.2.4. Global Check – Clearing All Trouble Codes

Here you can clear all the trouble codes stored in the ECUs.

Proceed as follows to delete the fault codes upon global check:

1. Perform steps 1 and 2 as described in section Global Check, Reading Trouble Codes [▶ 68].

NOTICE

Clearing all trouble codes in all vehicle systems is possible only if all systems can be read out with the same OBD plug.

2. Click to **>Clear all trouble codes<**.

⇨ The window **Prepare vehicle** appears.

3. Click **>Next<**.
4. Observe the information window.
5. Confirm the info window with **>Continue<**.

⇨ All saved trouble codes have been deleted.

9.4.3. OBD diagnostics

Here you can switch directly to the OBD2 diagnostics by just selecting the vehicle manufacturer and the fuel type.

9.4.3.1. Systems

Indication of the individual OBD 2 systems for petrol and Diesel vehicles as well as the pre-test of the German exhaust-emission check.

OBD Systems	
Pre test of German exhaust emission analysis	Quick test of the exhaust-gas relevant parameters of an OBD vehicle. This test should be done before the actual exhaust-gas emission inspection.
Readiness code	Indication of the type of diagnostic connector.

OBD Systems	
Parameter	Indication of all emission-relevant parameters. The number of the available parameters depends on the vehicle.
Freeze frame data	Indication of ambient data (rpm, coolant temperature) of the stored fault code.
Permanent trouble codes	Indication of all permanent trouble codes that are emission-relevant.
Trouble code deletion	Deletion of all trouble codes from "Mode 2/3/7".
Oxygen sensor test results	Check and evaluation of oxygen sensor function. This mode is not supported at CAN bus protocols.
Result of sporadic system test	Indication of manufacturer-specific parameters.
Sporadic trouble codes	This mode displays all sporadic and emission-relevant trouble codes.
Actuator test	Here you can actuate the actuators that have been determined by the manufacturer as emission-relevant.
Vehicle Information	Here you can call up vehicle and system information, e.g., the VIN.
Inactive trouble codes	Here you can view freeze frame data as well as permanent and sporadic fault codes.

9.4.3.2. Performing OBD Diagnostics

Proceed as follows to perform OBD diagnostics:

1. Select **>OBD diagnostics<** in the App launcher.
2. Select the requested manufacturer.
3. Select the requested fuel type.
4. Select the requested system.
5. Confirm the selection with **>Start<**.
6. Observe the info window.

⇨ The OBD diagnostic process starts.

9.4.4. Parameter

For quick troubleshooting many of the vehicle systems provide digital measured values in the forms of parameters. Parameters indicate the current status or rather nominal and actual values of the component. The device displays the parameters alphanumerically and graphically.

Example

The engine temperature can be within a range of -30 °C to 120 °C.

If the temperature sensor reports 9 °C but the engine actually has a temperature of 80 °C, the ECU calculates an incorrect injection time.

A trouble code is not stored, as this temperature is logical for the ECU.

Fault text: **Oxygen sensor signal faulty**

In both cases, diagnostics can be significantly eased if the corresponding parameters are read out.

The **mega macs X** reads the parameters and displays them in plain text. It additionally provides information on the parameters.

9.4.4.1. Reading Out Parameters

NOTICE

Calling up the ECU parameters for the fault diagnostics after the trouble codes have been read has priority over all other work steps.

NOTICE

First select a vehicle before you can read out parameters.

For more information about the vehicle selection read the section Vehicle selection [▶ 62] and CSM Vehicle Selection [▶ 63].

⚠ CAUTION!

Rolling of vehicle

Risk of injury or material damages

Proceed as follows before startup:

1. Apply the parking brake.
2. No gear is engaged.
3. Regard the window with information and instructions.

NOTICE

Danger of short circuit and voltage peaks when connecting the OBD plug

Danger of destruction of automotive electronics

Switch off ignition before connecting the OBD plug to the vehicle.

Proceed as follows to read out the parameters:

1. Plug in the OBD plug in the vehicle's diagnostic connector.
2. Select **Diagnostics** > **Parameters** in the App launcher.

NOTICE

The selection of the following possibilities depends on the selected manufacturer and vehicle type:

- Functions
- Component group
- System
- Data

3. Select the requested component group.
4. Regard the warning notice if appears.
5. Select the requested system.
6. Observe the start info.
7. Follow the instructions on the screen and start reading.
   ⇨ Communication to vehicle is being established.
   ⇨ The device automatically adds the most important parameters to the list **Selected parameters:**.
   ⇨ Use ⓘ to call up information on the selected parameters in the parameter selection menu, e.g. component descriptions.
   ⇨ Use ⊖ to remove selected parameters.
   ⇨ Use **Search for parameters** to search for additional parameters.
8. Use **Groups - (all parameters)** to select requested parameter groups.
   ⇨ Diagnose a certain problem directly by selecting a parameter group, as only the parameters required for it are stored.
9. Start the parameter reading procedure with **>Activate<**.
   ⇨ During the readout procedure, the recordings are automatically saved in the **Car History** under the previously entered registration number.
10. Return to the selection of systems and component groups with **>Complete<**.

9.4.5. Actuators

Use this menu to activate components in electronic systems. You are hence able to check basic functions and cable connections of those components.

9.4.5.1. Activating the actuator

NOTICE

First select a vehicle before you can activate an actuator.

For more information about the vehicle selection read the sections Vehicle selection [▶ 62] and CSM vehicle selection [▶ 63].

⚠ DANGER

Rotating/moving parts (electric fan, brake calliper piston, etc.)

Danger of cutting or pinching fingers or device parts

Remove the following things from the danger zone before actuating actuators:

- Limbs

- Persons

- Device parts

- Cables

⚠ CAUTION!

Rolling of vehicle

Risk of injury or material damages

Proceed as follows before startup:

1. Apply the parking brake.

2. No gear is engaged.

3. Regard the window with information and instructions.

NOTICE

Danger of short circuit and voltage peaks when connecting the OBD plug

Danger of destruction of automotive electronics

Switch off ignition before connecting the OBD plug to the vehicle.

Proceed as follows to activate the actuator:

1. Plug in the OBD plug in the vehicle's diagnostic connector.
2. Select **Diagnostics** > **Actuators** in the App launcher.

3. Select the requested component group.
4. Select the requested system.
5. Follow the instructions on the screen and start the procedure with **>Start<**.
6. Regard the window with information and instructions.
   ⇨ Communication to vehicle is being established.

⇨ By switching on or switching off single actuators you can do tests on the vehicle.

9.4.6. Basic setting

Here you can adjust or adapt components and ECUs according to manufacturer's specifications.

9.4.6.1. Preconditions for Basic Settings

Regard the following in order to perform basic settings:

- Vehicle system is working properly.
- No faults saved in trouble code memory of ECU.
- Vehicle-specific preparations have been done.

9.4.6.2. Performing Basic Settings

NOTICE

First select a vehicle before doing any basic settings.

For more information about the vehicle selection read the sections Vehicle selection [▶ 62] and CSM vehicle selection [▶ 63].

⚠ WARNING

Wrong or incorrectly performed basic settings

Risk of injury or material damage to vehicles

Regard the following when performing basic settings:

1. Select the correct vehicle type.

2. Regard the window with information and instructions.

⚠ CAUTION!

Rolling of vehicle

Risk of injury or material damages

Proceed as follows before startup:

1. Apply the parking brake.
2. No gear is engaged.
3. Regard the window with information and instructions.

NOTICE

Danger of short circuit and voltage peaks when connecting the OBD plug

Danger of destruction of automotive electronics

Switch off ignition before connecting the OBD plug to the vehicle.

Proceed as follows to perform the basic setting:

1. Plug in the OBD plug in the vehicle's diagnostic connector.
2. Select **Diagnostics** > **Basic settings** in the App launcher.
3. Select the requested component group.
4. Select the requested system.
5. Follow the instructions on the screen and start the procedure with **>Start<**.
6. Regard the window with information and instructions.
   ⇨ Communication to vehicle is being established.
7. Follow the instructions on the screen.

9.4.7. Coding

Here you can code components and ECUs. Codings are necessary, if components have been replaced or additional functions in an electronic system must be activated.

9.4.7.1. Performing Codings

NOTICE

Select a vehicle first before doing any codings.

For more information about the vehicle selection read the sections Vehicle selection [▶ 62] and CSM vehicle selection [▶ 63].

⚠ WARNING

The ECU is not coded or is incorrectly coded

Risk of death or serious injury as a result of the ECU not working or working incorrectly

Material damage of the vehicle or the ambient area

Regard the following when performing coding procedures:

1. Some working procedures require a specific training, e.g., working on the airbag.

2. Regard the window with information and instructions.

⚠ CAUTION!

Rolling of vehicle

Risk of injury or material damages

Proceed as follows before startup:

1. Apply the parking brake.

2. No gear is engaged.

3. Regard the window with information and instructions.

NOTICE

Danger of short circuit and voltage peaks when connecting the OBD plug

Danger of destruction of automotive electronics

Switch off ignition before connecting the OBD plug to the vehicle.

Proceed as follows to perform a coding procedure:

1. Plug in the OBD plug in the vehicle's diagnostic connector.
2. Select **Diagnostics** > **Codings** in the App launcher.
3. Select the requested component group.
4. Select the requested system.
5. Follow the instructions on the screen and start the procedure with **>Start<**.
6. Regard the window with information and instructions.
7. Follow the instructions on the screen.

9.4.8. Test function

Use this function to check a certain component group for correct function.

9.4.8.1. Performing Test Functions

NOTICE

First select a vehicle before doing any test functions.

For more information about the vehicle selection read the sections Vehicle selection [▶ 62] and CSM vehicle selection [▶ 63].

⚠ CAUTION!

Rolling of vehicle

Risk of injury or material damages

Proceed as follows before startup:

1. Apply the parking brake.
2. No gear is engaged.
3. Regard the window with information and instructions.

NOTICE

Danger of short circuit and voltage peaks when connecting the OBD plug

Danger of destruction of automotive electronics

Switch off ignition before connecting the OBD plug to the vehicle.

Proceed as follows to perform the test function:

1. Plug in the OBD plug in the vehicle's diagnostic connector.
2. Select **Diagnostics** > **Test function** in the App launcher.
3. Select the requested component group.
4. Select the requested system.
5. Follow the instructions on the screen and start the procedure with **>Start<**.
6. Regard the window with information and instructions.
7. Follow the instructions on the screen.

9.4.9. Service reset

Here you can reset service intervals provided that this function is supported by the vehicle. The diagnostic device performs the resets either automatically or you find a description for the manual reset procedure.

9.4.9.1. Performing Service Resets

NOTICE

First select a vehicle before doing any service resets.

For more information about the vehicle selection read the sections Vehicle selection [▶ 62] and CSM vehicle selection [▶ 63].

⚠ CAUTION!

Rolling of vehicle

Risk of injury or material damages

Proceed as follows before startup:

1. Apply the parking brake.
2. No gear is engaged.
3. Regard the window with information and instructions.

NOTICE

Danger of short circuit and voltage peaks when connecting the OBD plug

Danger of destruction of automotive electronics

Switch off ignition before connecting the OBD plug to the vehicle.

Proceed as follows to perform the service reset:

1. Plug in the OBD plug in the vehicle's diagnostic connector.
2. Select **Diagnostics** > **Service reset** in the App launcher.
3. Select the requested system.
4. Follow the instructions on the screen and start the procedure with **>Start<**.
5. Regard the window with information and instructions.
6. Follow the instructions on the screen.

9.5. Information

Here you have an overview of the following vehicle information:

- Diagnostic Database

  Here you can retrieve vehicle-specific online assistance.

- Service data

Here can find vehicle-specific service schedules for services according to manufacturer specifications.

- Technical data

  View all the necessary data for service and repair work on the vehicle here.

- Cabin air filter

  Here you can find the removal instructions for the cabin air filter.

- Timing belt data

  Here you can retrieve the tools required for repairing the timing belt, as well as the vehicle-specific removal and installation instructions.

- Repair instructions

  Here you can call up instructions for different repair work.

- Wiring diagrams

  Here you can find the vehicle-specific wiring diagrams such as for engine, ABS and airbag.

- Fuses/relays

  Here you can view the installation position of the main fuse box, the fuse box and the relay box as well as the individual fuses.

- Component test values

  The following is displayed here:

  – ECU plug

  – Pin assignment

  – Signal graphs

  – Nominal values

- Diesel systems

  This menu contains technical data and additional information about servicing diesel systems.

- Component location

  Here you can access cabin and engine compartment images for a component. The component location is indicated by a red triangle.

- Flat rate units

  Here you can view the common labor rates and repair times on different components.

- Service information

  Here you can find information about servicing various vehicle systems.

- Manufacturer campaigns

  Here you can retrieve vehicle-specific service campaigns of the manufacturer.

- Recall campaigns

  Here you can find the recall campaigns of manufacturers and importers.

- Advanced driver assistance systems

  Here you can find an overview of the advanced driver assistance systems that are actually installed in the selected vehicle. Once the corresponding system is selected you have access to the required data and information.

- Adaptive lighting systems

  Here you can find an overview of the adaptive lighting systems that are actually installed in the selected vehicle. Once the corresponding system is selected you have access to the required data and information.

- e-Mobility

  Here you can find e.g. manufacturer-specific and model-specific information about the work on hybrid and electric vehicles. This information includes component locations, technical instructions about the de-energizing of the high-voltage system and a description of the proceeding for measurements on high-voltage systems but it also includes measurement points and nominal values.

9.5.1. Diagnostic Database

This menu contains manufacturer and vehicle-specific solutions for various problematic cases.

The Hella Gutmann diagnostic database contains a large number of vehicle-specific problem solutions. The entries in the database consist of data from manufacturers' documentation, as well as feedback from mechanics who have successfully repaired the vehicle.

9.5.1.1. Calling Up the Diagnostic Database

NOTICE

You need an online connection to access the Hella Gutmann diagnostic database.

Proceed as follows to retrieve information from the database:

1. Select **Information** > **Diagnostic database** in the App launcher.
2. Select the requested symptom under **Symptom selection**.
   ⇨ Data download is in progress.
   ⇨ The items for the selected symptom are displayed.
3. Select the required **Item from online diagnostic database** from the left selection window.
4. If the selected proposed solution does not apply to the vehicle problem, then possibly select the tab **>Proposed solution 2<**.
   ⇨ There may appear several proposed solutions.

9.5.2. Service data

This menu contains vehicle-specific service schedules and oil change intervals.

9.5.2.1. Calling Up Service Data

Proceed as follows to call up service data:

1. Select **Information** > **Service data** in the App launcher.
2. Activate the check box of the required service type under **Selection**.
   ⇨ The individual service types differ depending on the manufacturer and vehicle type selected.
3. Select the check box of the required service type under **Extra packages**.
4. Click to **>Show service schedule<**.
   ⇨ The service data records appear with a task list.

NOTICE

We recommend printing out the service data and processing the single working positions systematically.
This information will not be saved in the **Car History**.

5. Activate the check box for the processed task.
6. Work though the tasks and then enter the tread depth and the tire pressure.
7. Use the virtual keypad to enter the tire tread depth of all tires under **mm**.
8. Use the virtual keypad to enter the tire pressure of all tires under **bar**.
9. Open the calendar under **Expiration date of first-aid kit:** with and select the corresponding date.
10. Open the calendar under **Expiration date of tire kit:** with and select the corresponding date.
11. Open the calendar under **Date for next general inspection:** with and select the corresponding date.
12. If necessary, enter a note under **Remark** by using the virtual keypad.
13. Click to print the service data.

9.5.3. Technical data

Here you can view all the necessary data, among other things, for service and repair work on the vehicle, e.g.:

- Adjustment values for ignition and exhaust system
- Recommended spark plug types
- Tightening torques
- Capacity of the air conditioning

Where necessary or helpful, the data records are supplemented by illustrative images.

9.5.3.1. Calling Up Technical Data

NOTICE

You need an online connection to access the technical data.

Proceed as follows to recall the technical data:

1. Select **Information** > **Technical data** in the App launcher.
2. Select the requested data under **Group**.
   ⇨ The technical data is displayed.

⇨ Additional image or text or image information is available if a green is displayed at the end of the text. Click to to view this information.

9.5.4. Cabin air filter

Here you can find the removal instructions for the cabin air filter.

9.5.4.1. Calling up the Removal Instructions for the Cabin Air Filter

Proceed as follows to call up the removal instructions for the cabin air filter:

1. Select **Information** > **Cabin air filter** in the App launcher.
2. Select the requested work.

9.5.5. Timing belt data

This menu contains the removal and installation instructions for timing belts and timing chains.

9.5.5.1. Calling Up Timing Belt Data

⚠ WARNING

Risk of shifting or falling vehicle parts

Risk of injury or pinching

Remove or secure all loosened mounting parts.

NOTICE

You need an online connection to access the timing belt data.

Proceed as follows to retrieve toothed belt data:

1. Select **Information** > **Timing belt data** in the App launcher.
   ⇨ Data download is in progress.

NOTICE

If multiple removal and installation instructions appear, these are indicated with numbers, e.g., Removal 1, Removal 2, Installation 1, Installation 2 and so on.

You need to click on the removal and installation instructions consecutively.

2. Select the required information.
   ⇨ The selected information is shown.

9.5.6. Repair instructions

Here you can call up instructions for different repair work.

9.5.6.1. Calling Up Repair Instructions

NOTICE

You need an online connection to access the repair instructions menu.

Proceed as follows to retrieve the repair instructions:

1. Select **Information** > **Repair instructions** in the App launcher.
   ⇨ Data download is in progress.
2. Select the required criterion.
3. Repeat step 2 if necessary.
   ⇨ Data download is in progress.
   ⇨ The corresponding repair instruction appears.

9.5.7. Wiring diagrams

View a vast number of vehicle-specific wiring diagrams here.

9.5.7.1. Calling Up Wiring Diagrams

NOTICE

You need an online connection to access the wiring diagrams.

Proceed as follows to retrieve wiring diagrams:

1. Select **Information** > **Wiring diagrams** in the App launcher.
2. Select the requested component group.
3. Select the requested system.
   ⇨ Several system types can be installed in one vehicle model range. The system type is mostly written on the ECU or can be determined through parameter readout.
   ⇨ The wiring diagram appears.
4. Select the requested component by clicking it under **Components**.
   ⇨ The component is indicated by a colored frame and the appropriate designation.

9.5.7.2. Retrieving Interactive Wiring Diagrams

NOTICE

The OBD plug needs to be connected to the vehicle's diagnostic connection so that you can retrieve interactive wiring diagrams.

Not every component supports this function (supported components are marked with a dot in the legend).

Proceed as follows to retrieve interactive wiring diagrams:

1. Perform steps 1 to 3 as described in section Calling Up Wiring Diagrams [▶ 83].
2. Click to ▶ to view parameters from the diagnostic request.

9.5.8. Fuses/relays

Here you can view the installation position of the main fuse box, the fuse box and the relay box as well as the individual fuses.

9.5.8.1. Calling Up Fuse and Relay Box Images

Proceed as follows to call up fuse and relay box images:

1. Select **Information** > **Fuses/relays** in the App launcher.
2. Select the required fuse/relay box under **Fuse box**.
   ⇨ The device indicates the fuse box and or the relay box.
   ⇨ On the right there is an overview of the selected fuse and relay box.
   ⇨ The top left window indicates the installation position of the fuse or relay box in the vehicle marked with a red 📍.
   ⇨ The relays are marked with grey rectangles.
   ⇨ Fuses are marked with colored rectangles.
3. Selected the required fuse or relay by clicking it.

9.5.9. Component test values

This menu contains measurement and test data for components with cables connected to an ECU plug.

9.5.9.1. Calling Up Component Test Values

Proceed as follows to retrieve component test values:

1. Select **Information** > **Component test values** in the App launcher.
2. Select the requested component group.
   ⇨ A selection window appears.
   ⇨ Image and text information is displayed.
   ⇨ Depending on the selected component, the following information is available.
3. Use ⌄ to view nominal values for test steps.

9.5.10. Diesel systems

Here you can call up vehicle-specific information on the service of Diesel cars.

9.5.10.1. Calling Up Diesel Systems

Proceed as follows to call up technical data under Diesel systems:

1. Select **Information** > **Diesel systems** in the App launcher.
2. Select the requested data type under **Diesel data selection**.
3. Select the requested system.
4. Select the requested component.
   ⇨ The right selection window displays image information about the selected component.

9.5.11. Component location

Here you can access cabin and engine compartment images for a component. The component location is indicated by a

.

9.5.11.1. Calling up the Component Location

Proceed as follows to call up the component location:

1. Select **Information** > **Component location** in the App launcher.
   ⇨ A drop-down list appears.
   ⇨ The left window shows individual components installed in the vehicle.
2. Select the requested component under **Components**.

⇨ The location of the selected component is marked with a .

9.5.12. Flat rate units

Here you can view the common labor rates and repair times on different components.

9.5.12.1. Calling Up Flat Rate Units

NOTICE

You need an online connection to access the flat rate units.

Proceed as follows to retrieve flat rate units:

1. Select **Information** > **Flat rate units** in the App launcher.
   ⇨ Data download is in progress.
2. Select the requested category.
   ⇨ Data download is in progress.
3. Select the requested subcategory.
   ⇨ Data download is in progress.

Single working steps are displayed here only if the prevailing work steps are indicated in bold letters. These can be displayed by clicking the bold text.

9.5.13. Service information

This menu contains information about servicing various systems.

9.5.13.1. Calling Up Service Information

Proceed as follows to call up service information:

1. Select **Information** > **Service information** in the App launcher.
2. Select the requested information under **Criteria selection**.
3. Repeat step 2 for another selection if necessary.
   ⇨ The right selection window displays texts and images for every information selected.

9.5.14. Manufacturer campaigns

This menu contains vehicle-specific service campaigns of manufacturers.

9.5.14.1. Calling Up Manufacturer Campaigns

NOTICE

You need an online connection to access the manufacturer campaigns.

Proceed as follows to retrieve manufacturer campaigns:

1. Select **Information** > **Manufacturer campaigns** in the App launcher.
   ⇨ Data download is in progress.
2. Select the requested criterion under **Criteria selection**.
3. Repeat step 2 for another selection if necessary.
   ⇨ Data download is in progress.

9.5.15. Recall campaigns

This menu contains the recall campaigns of manufacturers and importers.

Recall campaigns aim to protect consumers against unreliable products. Models affected by a recall campaign from within the last 2 years are identified by a ⚠.

Hella Gutmann Solutions GmbH is only a supplier of these contents and is therefore not responsible for its exactness, correctness and reliability. Please direct potential questions regarding the scope and handling directly to the authorized repair shops/manufacturers. For reasons of liability, the **Hella Gutmann** Technical Help Line does not provide information on this matter.

9.5.15.1. Calling Up Recall Campaigns

NOTICE

You need an online connection to access recall campaigns.

Proceed as follows to retrieve recall campaigns:

1. Select **Information** > **Recall campaigns** in the App launcher.
   ⇨ Data download is in progress.
2. Select the requested recall campaign in the left drop-down list.

9.5.16. Advanced driver assistance systems

Here you can find an overview of the advanced driver assistance systems that are actually installed in the selected vehicle. Once the corresponding system is selected you have access to the required data and information.

9.5.16.1. Retrieving Advanced Driver Assistance Systems

Proceed as follows to retrieve advanced driver assistance systems:

1. Select **Information** > **Advanced driver assistance systems** in the App launcher.
   ⇨ The device displays an overview of the advanced driver assistance systems which are installed in the vehicle.
2. Select the requested system.
   ⇨ You can select several systems at once.
3. Select the requested system under **System selection**.
   ⇨ Image information appears in the right selection window.
4. Click to **>System guide<**.
   ⇨ The following information is displayed: Descriptions of systems and functions, information about potential system restrictions and system errors, component descriptions, precautionary measures as well as detailed instructions for calibration and repair processes including accompanying work.

9.5.17. Adaptive lighting systems

Here you can find an overview of the adaptive lighting systems that are actually installed in the selected vehicle. Once the corresponding system is selected you have access to the required data and information.

9.5.17.1. Retrieving Adaptive Lighting Systems

Proceed as follows to retrieve adaptive lighting systems:

1. Select **Information** > **Adaptive lighting systems** in the App launcher.
   ⇨ The device displays an overview of the adaptive lighting systems which are installed in the vehicle.
2. Select the requested system.
   ⇨ You can select several systems at once.
3. Select the requested system under **System selection**.
   ⇨ Image information appears in the right selection window.
4. Click to **>System guide<**.
   ⇨ The following information is displayed: Descriptions of systems and functions, information about potential system restrictions and system errors, component descriptions, precautionary measures as well as detailed instructions for calibration and repair processes including accompanying work.

9.5.18. e-Mobility

Here you can find e.g. manufacturer-specific and model-specific information about the work on hybrid and electric vehicles. This information includes component locations, technical instructions about the de-energizing of the high-voltage system and a description of the proceeding for measurements on high-voltage systems but it also includes measurement points and nominal values.

9.5.18.1. Calling Up e-Mobility

Proceed as follows to call up all the necessary information about the work on the selected hybrid and electric vehicle:

1. Select **Information** > **e-Mobility** in the App launcher.
   ⇨ The **Group** menu gives an overview of the relevant high-voltage systems, the necessary qualifications for the work on vehicles with high-voltage systems, proceedings and of the technical data.
2. Select the requested group.
3. Select the requested work.
   ⇨ The device displays interactive component locations, technical data, measurement points and the proceeding for measurements with the appropriate nominal values for the selected hybrid and electric vehicle.
   ⇨ In addition to that the device displays here all the functions, service and repair work relevant for high-voltage systems for the selected hybrid and electric vehicle.

10. Measuring technology

NOTICE

The use of the measuring technology menu requires the optionally available measurement module. These can be the *MT-HV* (with or without *MT-77*) or the *MT-USB*.

Select measured variables and channels here. Then you can perform various measurements.

Measurement technology is a digital signal acquisition and output. This means that the voltage signal is detected and saved within a few microseconds. These registered measured values are depicted as continuous signal curve on the screen in real time.

Just perform measurements under **>Measurements<**.

Use the measurements function for measuring and/or depicting the following measured variables:

- Voltage
- Current (with amp clamp)
- Resistance

Current measurements are allowed exclusively with the clamp meter from **Hella Gutmann**. Depending on the required measurement, different clamps are to be used.

A progress bar in the top toolbar indicates the remaining free storage capacity reserved for that in the diagnostic device.

Use **>Loading measurement<** to call up registered and saved measurements.

Use **>Delete all measurements<** to delete already registered and saved measurements.

⚠ CAUTION!

Overvoltage

Fire hazard/danger of damage to the diagnostic device and its surroundings

Comply with the max. permitted voltage load of the oscilloscope channels

10.1. Performing Measurements with the MT-USB

Proceed as follows to perform measurements with the MT-USB:

1. Connect the test leads of the **MT-USB** with the vehicle (see operating instructions **MT-USB**).
2. Select **>Measurements<** in the app launcher.
   ⇨ The **Measurements** window is displayed.
3. Activate the check box for the desired measured variable and the channel.

4. Select **>Start measurement<**.

   ⇨ Measurement will be started.

10.2. Performing Measurements with the MT-HV

10.2.1. Low-Voltage Measurements

NOTICE

You can alternatively use the measurement module MT 56 for measuring voltage, current and resistance.

This section describes how to perform a low-voltage measurement in connection with the MT 77 measurement module. The following pictures illustrate the exact proceeding.

⚠ CAUTION!

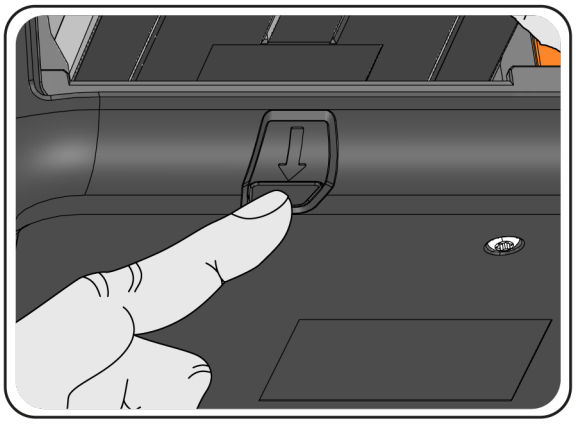
Danger of electric shock / Danger of destruction of the device

Ensure that the power supply is disconnected and that all high-voltage condensers are discharged before you perform measurements regarding resistance, continuity, diodes or capacity.

10.2.1.1. Inserting the MT 77 into the MT–HV

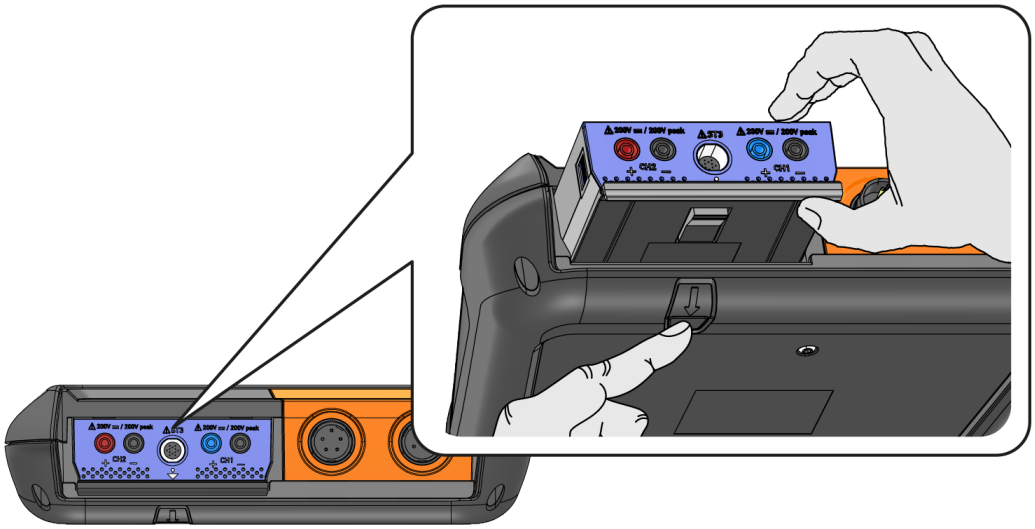
Proceed as follows to insert the MT 77 into the MT-HV:

1. Press the unlocking button of the MT-HV.



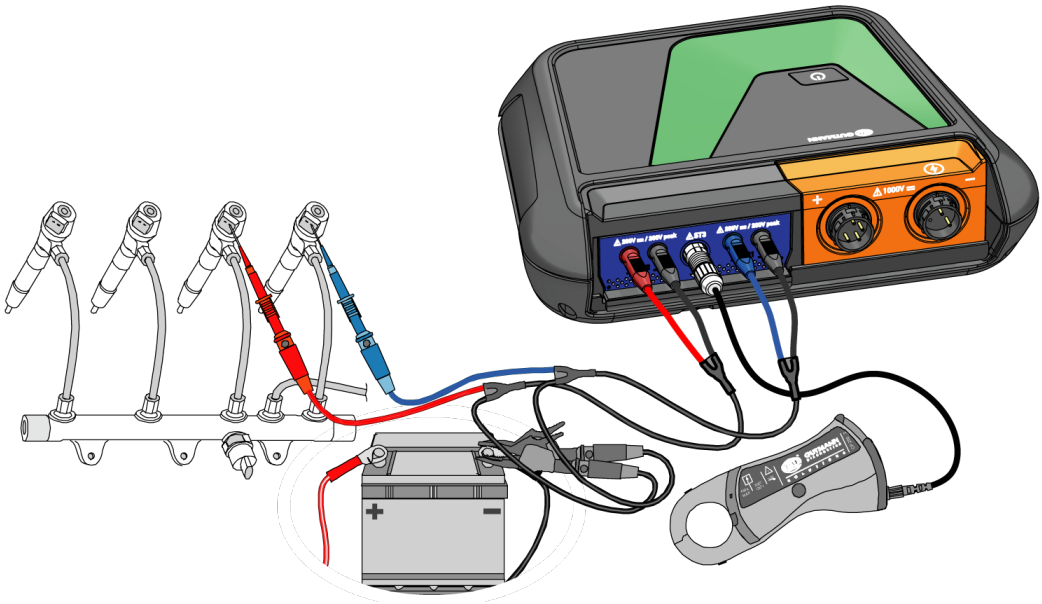
   ⇨ The module releases from the module slot.

2. Draw the module out of the module slot.
3. Insert the MT 77 into the free module slot, pay attention that it locks into place.



⇨ Now the MT 77 is instered in the module slot of the MT-HV.

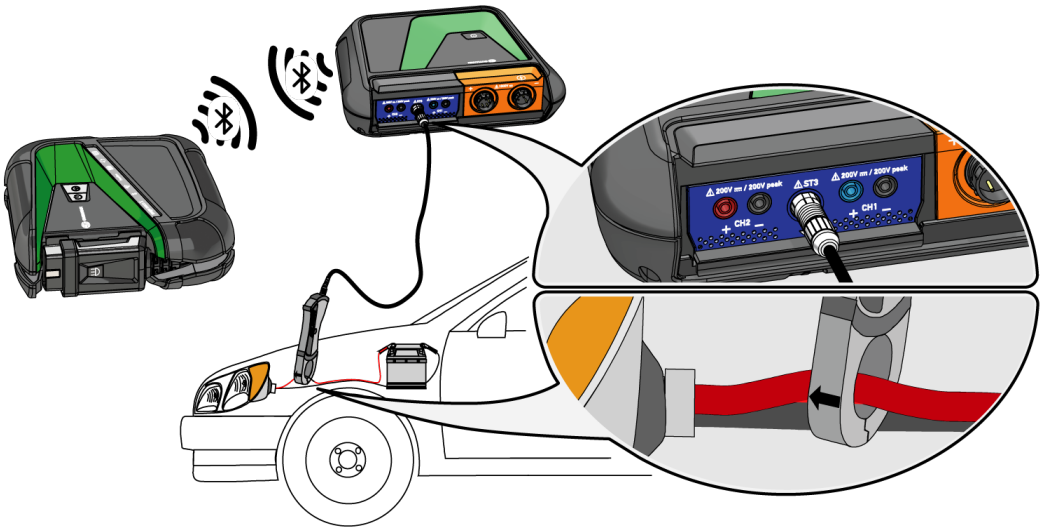
10.2.1.2. Connecting the Test Lead to the MT 77



10.2.1.3. Connecting the Current Clamp to Vehicle and MT 77

NOTICE

The clamp meters are parts of the optional accessory parts.



10.2.2. High-Voltage Measurement

This section describes how to perform a high-voltage measurement. The following pictures illustrate the exact proceeding.

10.2.2.1. Connecting the high-voltage test lead to the MT-HV

⚠ DANGER

Danger to life due to electric voltage

It is a precondition for performing high-voltage measurements that the user has knowledge of automotive technology and is therefore aware of the sources of danger and risks in the workshop and on motor vehicles. An additional country-specific qualification is mandatory.

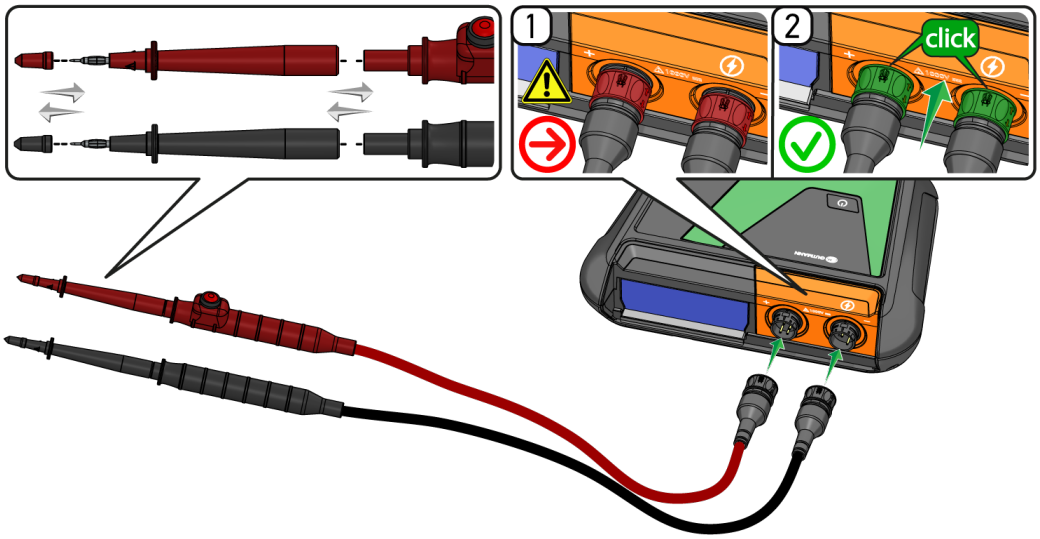
⚠ CAUTION!

Danger of destruction of the MT-HV and/or the automotive electronics

Only use approved test prods and high-voltage test leads.

Do not remove the protective cap from the test prods during high-voltage measurements.

Prior to every application, check the test prods and high-voltage test leads for damage (visual inspection).



10.2.2.2. Performing High-Voltage Measurements

⚠ DANGER

Danger to life due to electric voltage on vehicles with high-voltage systems

It is a precondition for performing high-voltage measurements that the user has knowledge of automotive technology and is therefore aware of the sources of danger and risks in the workshop and on motor vehicles. An additional country-specific qualification is mandatory.

Ensure, that the component to be evaluated is de-energized.

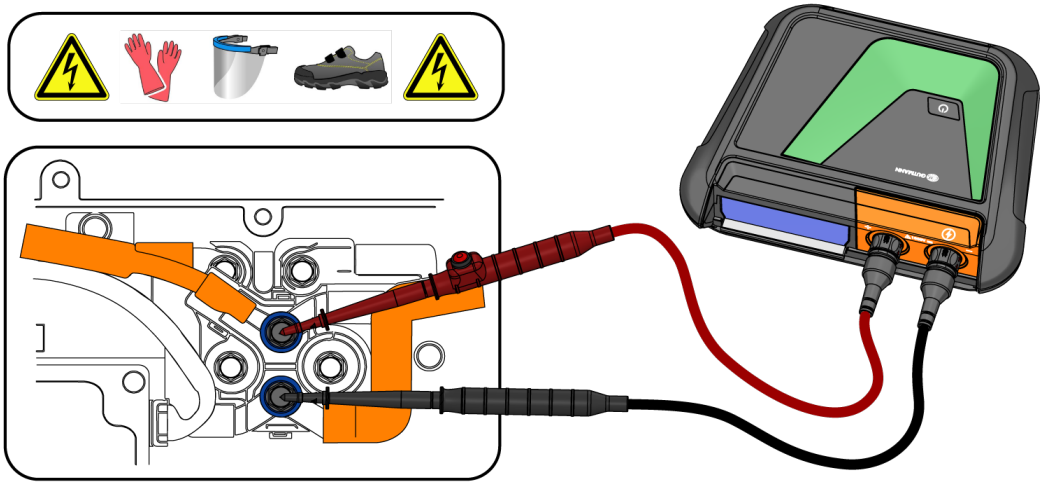
Ensure that you or other persons do not touch any sockets or connecting cables of the high-voltage battery module.

Pay attention not to touch energized components.

Do not remove the protective cap from the test prods during high-voltage measurements.

NOTICE

The following image is an example.



11. Messages

Here you can view sent help calls. Additionally you can send further messages/questions about the sent help call to the Hella Gutmann support.

11.1. Indicating Help Calls

Proceed as follows to call up sent help calls:

1. Select ☰ > **Messages**.
2. The sent help calls are indicated.
   - ⇨ Select the requested help call in the left selection window.
   - ⇨ In the lower messages window you can send further messages/questions about the sent help call to the Hella Gutmann support.
3. Click to **>Send message<** to send further messages/questions about the sent help call to the Hella Gutmann support.

12. General Information

12.1. PassThru Troobleshooting

The following list will help you to solve minor problems yourself. Select the relevant problem description and check and perform the steps listed under **Solution** in sequence until the problem is solved.

Problem	Solution
The left row of arrows between the laptop/ tablet and the HGS PassThru device is red. The second test does not start.	• Check the connections of the USB cable and plug connections to the laptop/tablet, to the HGS PassThru device and the **mega macs X**. • Check USB cable and plug connectors for damage. • Insert the USB cable and plug connectors correctly. • Activate the PassThru function of the **mega macs X**. • Switch the **mega macs X** off and on again. • Reactivate the PassThru function and repeat the communication test.
The left row of arrows between the laptop/ tablet and the HGS PassThru device is green. The right row of arrows between the HGS PassThru device and the vehicle remains red.	• Switch on the vehicle ignition. • Check if there is sufficient voltage supply (>12 V) through the OBD plug which is connected to vehicle. • Check if the OBD plug properly connected to the vehicle's diagnostic connection.

12.2. Troubleshooting table

The following list will help you to solve minor problems yourself. Select the relevant problem description and check and perform the steps listed under **Solution** in sequence until the problem is solved.

Problem	Solution
The mega macs X crashes or does not function.	• Switch of and on the display medium (laptop/tablet). • Restart the mega macs X. • Perform a software update.
The mega macs X does not print.	• Switch on the printer. • Ensure that the printer is online. • Ensure the paper feed. • Exactly adjust the paper feed mode (continuous or rather single sheet).

Problem	Solution
	• Check the printer configuration. • Correctly connect the printer cable. • Replace the printer cable if necessary. • Select another printer if necessary.
The oscilloscope indicates wrong values.	• Plug the test lead into the **MT-USB**. • Attach the test lead correctly to the affected components of the vehicle. • Replace the test lead if necessary. • Connect the measuring channel (-) to the vehicle ground.
Communication to vehicle cannot be established.	• Select the correct vehicle by engine code. • Strictly follow the notes in the window with infos and instructions. • Check if there is sufficient voltage supply (>12 V) through the OBD plug which is connected to vehicle.
The SDI diagnostic interface is not indicated in the web browser.	Verify that the Wi-Fi settings in the display medium (tablet/laptop) are correct.
The connection between the display unit and the mega macs X has been interrupted.	• The display unit is connected to another Wi-Fi network. Please check the Wi-Fi settings (is the connection with the macsx-xxxx network available?). • An update is installed on the mega macs X. Wait until the Wi-Fi indicator lamp on the mega macs X lights up permanently green again. • The mega macs X has not been used for some time. The SDI needs to be loaded again with the button in the display unit.

12.3. Care and Maintenance

Proceed as follows to care and maintain the **mega macs X** properly:

- Clean the **mega macs X** regularly with mild cleaning detergents.
- Use commercial household cleaning detergents and a moistened, soft cleaning cloth.
- Replace damaged cables/accessories immediately.
- Only use original spare parts. You can order these parts via the Order Center of the Hella Gutmann Solutions GmbH.

  NOTE: To be able to replace the OBD cable and the battery, you need to unscrew and to remove the back cover of the housing.

12.4. Disposal

NOTICE

The guidelines listed here are exclusively valid within the European Union.

In compliance with Directive 2012/19/EU of the European Parliament and Council of 4 July 2012 relating to Waste Electrical and Electronic Equipment (WEEE), and the German national statute governing the distribution, return and environmental disposal of electrical and electronic equipment (Electrical and Electronic Equipment Act – ElektroG) of 20 October 2015 in its current version, we are obliged to take back this device, distributed by us after 13 August 2005, at the end of its service life free of charge and to dispose of it in accordance with the above-mentioned directives. Juli 2012 über Elektro- und Elektronik-Altgeräte sowie dem nationalen Gesetz über das Inverkehrbringen, die Rücknahme und die umweltverträgliche Entsorgung von Elektro- und Elektronikgeräten (Elektro- und Elektronikgerätegesetz – ElektroG) vom 20.10.2015 in der aktuell gültigen Fassung, verpflichten wir uns dieses, von uns nach dem 13.08.2005 in Verkehr gebrachte Gerät nach Beendigung der Nutzungsdauer unentgeltlich zurückzunehmen und es den o.g.

Because this diagnostic product is equipment that is used exclusively commercially (B2B), it must not be handed over to a public disposal facility.

The diagnostic product can be disposed of at the following address (specifying the date of purchase and the product number):

Hella Gutmann Solutions GmbH

Am Krebsbach 2

79241 Ihringen

GERMANY

WEEE reg. no.: DE 25419042

Phone: +49 7668 9900-0

Fax: +49 7668 9900-3999

E-mail: info@hella-gutmann.com

12.5. Technical Data of the mega macs X

12.5.1. General Data

Processor	• ARM dual processor 1.2 GHz • RAM 2 GB DDR3 • EMMC 32 GB
Interfaces	• USB-C • DC-In • Ethernet
Supply voltage	12 V to 24 V ⎓
Frequency bands	• Output power Bluetooth EDR: max. 15.5 dBm • Output power Wi-Fi 2400-2483.5 MHz: max. 16.3 dBm • Output power WLAN 5150-5350 MHz: max. 17,2 dBm
Ambient temperature	Working range: 0 to 45 °C Storage temperature: -10 to 50 °C
Weight	1420 g
Dimensions	210 x 193 x 80 mm (H x W x D)
Demands on an external displaying device	• Screen diagonal 24.5 cm (10") • Screen resolution at least 1024*768 Pixel • Wi-Fi corresponds to IEEE 802.11 n • Browser: Google Chrome, at least version 81

12.5.2. Charging tray

Non-contact charging procedure	Inductive energy transfer according to HGS standard (no QI charging procedure)
Supply voltage	15 V ⎓
Ambient temperature	Working range: 0 to 45 °C Storage temperature: -10 to 50 °C
Weight	590 g
Dimensions	164 x 164 x 37 mm (H x W x D)

12.6. Declaration Of Conformity mega macs X

KONFORMITÄTSERKLÄRUNG

CE

Wir, die Hella Gutmann Solutions GmbH
Am Krebsbach 2
D-79241 Ihringen

erklären in alleiniger Verantwortung, dass das Produkt:

Produktname:	mega macs X
Artikelnummer:	8PD 015 265-841
Markenname:	Hella Gutmann Solutions

auf das sich diese Erklärung bezieht, den Anforderungen der RICHTLINIEN RED 2014/53/EU und RoHS 2011/65/EU entspricht. Das Produkt entspricht den nachfolgend genannten Standards:

- IEC 62368-1:2014
- ETSI EN 301 489-1 V2.2.3
- ETSI EN 301 489-17 V3.2.4
- ETSI EN 300 328 V2.2.2
- ETSI EN 301 893 V2.1.1
- IEC 61326-1:2012
- EN 55032:2015

Ort und Datum der Ausstellung (dieser Konformitätserklärung) Ihringen, 02. Februar 2021

Unterzeichnet von oder vertreten durch .....

Name (in Druckschrift): Fabian Bierenstiel
Funktion: Head of Design and Development

BD-Nr.: 0132

12.7. FCC Compliance Statement

Compliance statement (part 15.19)

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

Warning (part 15.21)

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Information to the User (Part 15.105 (b))

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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Made in Germany