

SIEMENS

SIDIS

MPS-T2

Operating Instructions

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Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

DANGER
indicates that death or severe personal injury will result if proper precautions are not taken.
! WARNING
indicates that death or severe personal injury may result if proper precautions are not taken.
! CAUTION
indicates that minor personal injury can result if proper precautions are not taken.
NOTICE
indicates that property damage can result if proper precautions are not taken.

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

Qualified Personnel

The product/system described in this documentation may be operated only by **personnel qualified** for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

Proper use of Siemens products

Note the following:

! WARNING
Siemens products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by Siemens. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be complied with. The information in the relevant documentation must be observed.

Trademarks

All names identified by ® are registered trademarks of Siemens AG. The remaining trademarks in this publication may be trademarks whose use by third parties for their own purposes could violate the rights of the owner.

Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

Preface

Preface

These operating instructions contain all the information you need for commissioning and operation of a device MPS-T2.

It is intended both for programming and testing personnel who commission the device and connect it with other units (automation systems, programming devices), as well as for service and maintenance personnel who install add-ons or carry out fault/error analyses.

Basic knowledge requirements

Knowledge of personal computers, operating systems and programming is required to understand this manual. General knowledge in the field automation control engineering is recommended.

Scope of validity of this document

These operating instructions apply to the SIDIS MPS-T2 devices.

- 6AL2047-XXXX-XXXX

Scope of this documentation

The device documentation comprises:

- SIDIS Tablet MPS-T2 operating instructions in English
- Instruction for Desk Docking

Conventions

The following generic terms are used in this documentation:

Generic term	Specific name
Device	MPS-T2



The manual is not available online.
Please contact your local SIEMENS representative to get updated manuals.

Figures

This manual contains figures of the described device. The supplied device might differ in some details from the figures. Within some of the figures, one device is used to represent all devices.

History

The following editions of these operating instructions have been published:

Edition	Comment
11/2023	First edition
05/2024	Update; Chapter 5.1.1 added
08/2024	Imager configuration updated
01/2025	FCC Statement and EOL compartment added

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Product description

1.1 Product highlights

SIDIS MPS-T2 (mobile test station tablet) is a high-performance mobile test station for diagnostics in motor vehicle production. The compact device contains the vehicle communication interface (VCI) and the I/O required for test operation.

- Very high-level performance and high graphics performance
- Extremely robust
- Compact design
- Integrated vehicle communication interface (VCI)



Features

- 11th Generation Intel® Tiger Lake processor
- Anti-glare film suitable for outdoor use
- Integrated barcode reader
- Optional integrated RFID reader
- Touch screen with multi-touch function
- MicroSD card reader
- Configurable function keys on Windows Desktop
- Externally accessible interfaces including USB 3.0 Type A and Type C

Area of application

Vehicle production includes a variety of processes for testing an parameter assignment. MPS-T2 is a mobile test station ideally matched to the "SIDIS" software application for:

- Testing of vehicle functions
- High-performance flashing of control devices
- Parameter assignment of control devices and
- Use in component or module test

Its compact and robust design makes the device especially well-suited for harsh industrial environments. The integrated steering wheel mount makes it easy to place the MPS-T2 on the steering wheel. A stationary test station can be easily implemented in combination with the docking station.

The device has a powerful lithium ion battery. Tests are therefore also possible temporarily in mobile use. In online mode, buffered test results are transferred to the servers via network connections (LAN interface of the docking station or WLAN).

Highlights

- High-performance, robust device
- Mobil test device matched to the SIDIS software
- Integrated vehicle communication interface (VCI) for communication with control devices (ECU communications)
- Integrated power supply input at the VCI with wide range (cars and trucks)
- Integrated application-specific I/O, e.g. RFID reader, IR PLI, SRIF2002 radio link (only receiver)
- Keys for diagnostics mode with SIDIS software
- Externally accessible ports such as USB type A and type C, Mini DisplayPort
- Touch screen (multi-touch function is possible)

Features

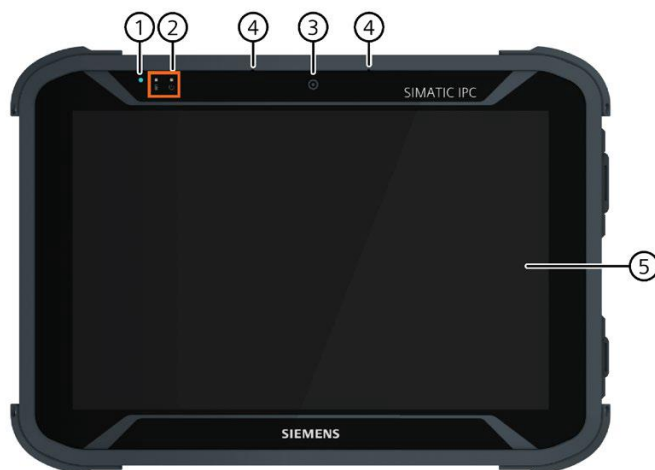
General features	
Type of construction	Mobile test device for automotive production
Processor	<ul style="list-style-type: none"> Intel® Core™ i5-11357G7 @ 2.40GHz
RAM	<ul style="list-style-type: none"> 32 GB
Graphic	<ul style="list-style-type: none"> Intel® Iris® Xe Graphics Graphics memory: part of the graphic memory is dynamically shared in the system memory Resolutions/frequencies/colors: according to the setting options of the graphics driver
Display	<ul style="list-style-type: none"> 10.1" (1920x1200), 800 nits Multi-touch (capacitive touch screen, PCAP technology)
Power supply	<ul style="list-style-type: none"> Connection of power supply directly to the device or to the docking station: 100 to 240 V AC, 50-60 Hz Via OBD connector: 9 to 32 V DC, wide range for cars and trucks
On/off Button	<ul style="list-style-type: none"> On the right side
Font keys	<ul style="list-style-type: none"> Virtual keyboard on the Windows desktop with diagnostics function keys for SIDIS: <ul style="list-style-type: none"> - SCAN - STOP - N.O.K - arrow down - + - sign
Status displays on the device (LEDS)	<ul style="list-style-type: none"> Rechargeable battery ON/OFF
Storage media	
SSD	<ul style="list-style-type: none"> Capacity: 512GB M.2 2280 SSD NVMe
Reader	
Barcode reader	<ul style="list-style-type: none"> 1D/2D barcode imager
RFID reader	<ul style="list-style-type: none"> SIDIS tags (according to ISO15693)
Card reader	<ul style="list-style-type: none"> MicroSD card reader

1.3 External design of the device

1.3.1 Interfaces and operator controls

1.3.1.1 Exterior design

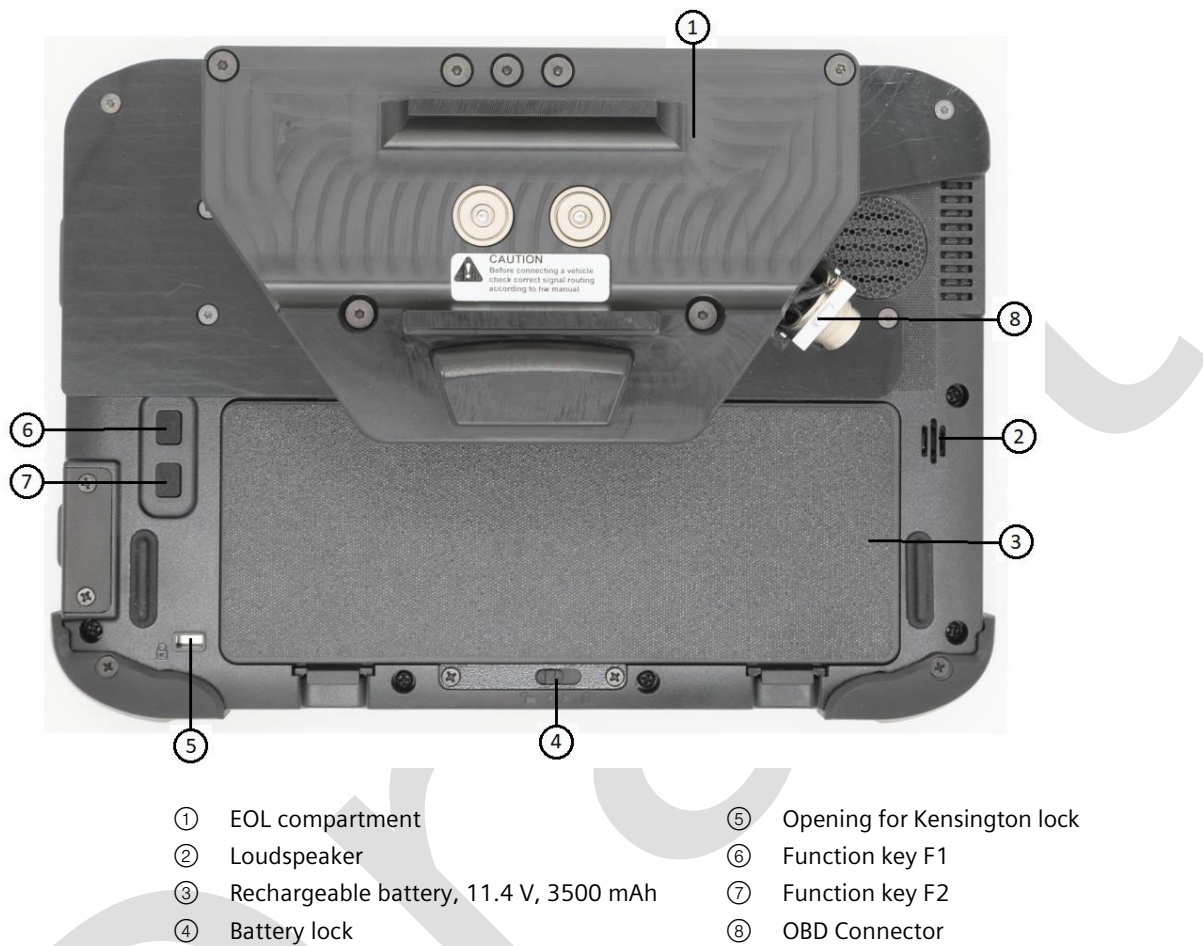
Front view



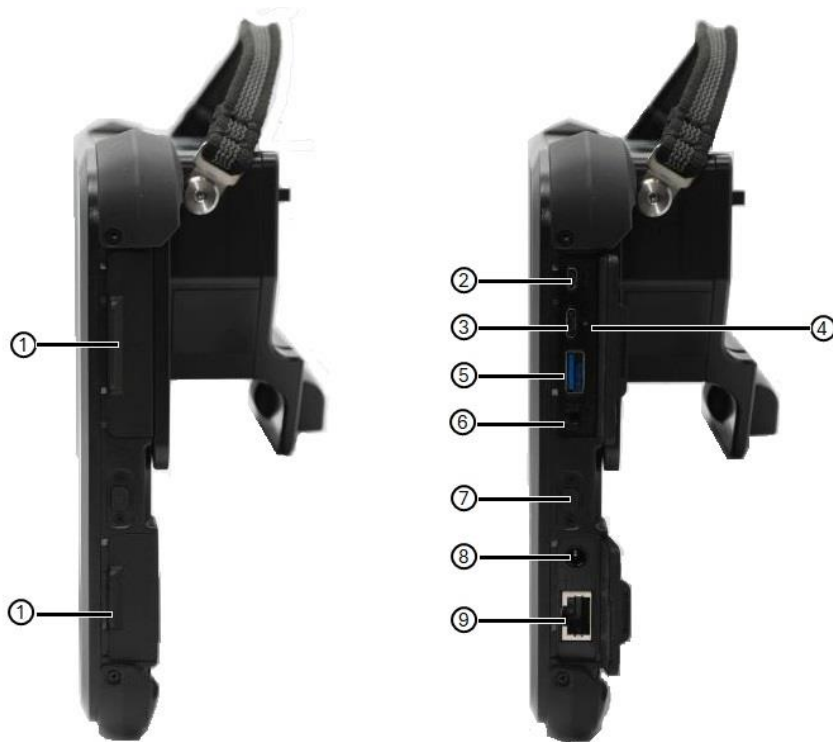
- ① Light sensor
- ② LED status displays (Page 14)
- ③ Front camera, 2 megapixels
- ④ Microphone
- ⑤ Touch screen, 10.1 inch

1.3 External design of the device

Back view



Right view



① Cover for interface

② Micro HDMI

③ USB 3.0 Type C

④ Reset button

⑤ USB 3.0 Type A

⑥ Audio jack socket, compatible with 3.5 mm 4-pole plug

⑦ Power button

⑧ Power Jack from Power Adapter: DC-In 19 V

⑨ RJ45 Ethernet (Not used in MPS-T2)

1.3 External design of the device

Top view



- ① Cover for Barcode Imager
- ③ Cover for IR-PLI Receiver

- ② RFID Reader
- ④ EOL compartment

Bottom view



- ① Interface for docking station

1.3.2 Operator controls

1.3.2.1 Power button

The Power button is on the right of the device, see section Exterior design (Page 10).

Then Power button (power) has the following functions:

- Switch on the table, press power button until the power indicator is on.
- Switch off the tablet without shutting down the Microsoft Windows in event of a fault, press power button for 10 seconds until the power indicator is off.

1.3.2.2 Configurable function keys

<F1> function keys has the following functions:

- They simulate commonly used keyboard inputs
- You can configure frequently used tablet functions to them, for example, function for calling the camera.
- The same key or key combination has different functions depending on what phase the device is in

The following table describes the different functions of the keys:





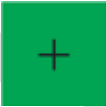
Key	Function in "POST" phase (before Windows boots up)	Default Function in "WIN" phase (after Windows boots up)	
		Short press	Long Press
F1	Opening the Recovery menu	Start the Web browser ¹	Touch Mode ¹
F2	Calling the BIOS setup screen	Start the Barcode reader	Start the Barcode reader

¹ You can change the key assignment using the Programming function keys (Page 53), "Settings > F1" menu.

1.3 External design of the device

1.3.2.3 Buttons on the virtual keyboard

The buttons are located on the screen of the device. The buttons can either be on the left or the right side of the screen.



SCAN button 	Operation initiates barcode reader.
STOP button 	Cancels a test.
N.O.K button 	Not OK: evaluates a test as negative, test is continued with the next test step.
Back button 	Operation repeats a test step that was not performed correctly.
OK button 	Operation evaluates a test as positive, test is continued with the next test step.

1.3.2.4 Status displays

The status displays are located on the front of the device, see Exterior design (Page 10) section.

System status displays

The system status displays indicate various operating states.

Icon	Meaning	Colors	Meaning of colors
	Rechargeable battery	Orange	Power supply unit is connected. Battery is being charged.
		Green	Power supply unit is connected. Battery is charged.
		Red illuminated	Less than 10% battery remaining
		Red flashing	Battery being swapped during the tablet in operation
		Off	No battery available
	ON/OFF	Blue	Tablet is ON.
		Off	Tablet is OFF.
	Light Sensor	Always white	Sensing the ambient brightness; the default setting is Auto; it will adjust the LCD brightness automatically.

1.4

Accessories

This chapter lists accessories which are available for your device but not included in the scope of delivery are available for your device.

NOTICE**Risk of malfunction or damage to the device**

Non-compatible accessories or incorrect spare part can damage the device and lead to malfunctions.

Use only the supplied accessories that you ordered through SIEMENS Industry Mall.

You can find information at the following websites:

- Industry Mall (<https://mall.industry.siemens.com>)

Spare parts are available through your local SIEMENS representative.

Name	Siemens Model Name	Specification
Desk docking	SIMATIC IPC MD-34A-DD	6AV7676-1AC00-0AA0

Order accessories and original spare parts via SIEMENS Industry Mall

1. Navigate to the Internet URL of Industry Mall (<https://mall.industry.siemens.com>).
2. Log in with your customer data (login on the top right).
3. Select the user language.
4. Navigate to your device in the product catalog (tree structure on the left): "Automation Engineering > PC-based automation > Industry PC > Tablet PC > ..."
5. In the tree structure on the left, click on your device.
6. Select the "Accessories" tab in the display area.

Safety notes

2.1 Security information

Siemens provides products and solutions with industrial security functions that support the secure operation of plants, systems, machines and networks.

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens' products and solutions constitute one element of such a concept. Customers are responsible for preventing unauthorized access to their plants, systems, machines, and networks. Such systems, machines and components should only be connected to an enterprise network or the internet if and to the extent such a connection is necessary and only when appropriate security measures (e.g. firewalls and/or network segmentation) are in place.

For additional information on industrial security measures that may be implemented, please visit (<https://www.siemens.com/industrialsecurity>).

Siemens' products and solutions undergo continuous development to make them more secure. Siemens strongly recommends that product updates are applied as soon as they are available and that the latest product versions are used. Use of product versions that are no longer supported, and failure to apply the latest updates may increase customers' exposure to cyber threats.

To stay informed about product updates, subscribe to the Siemens Industrial Security RSS Feed visit (<https://www.siemens.com/cert>).

2.2 Note on administrator accounts

Disclaimer for third-party software updates

This product includes third-party software. Siemens AG only provides a warranty for updates/patches of the third-party software, if these have been distributed as part of a Siemens software update service contract or officially released by Siemens AG. Otherwise, updates/patches are undertaken at your own risk. You can find more information about our Software Update Service offer on the Internet at Software Update Service (<https://support.industry.siemens.com/cs/ww/en/view/109759444>).

2.3 General safety instructions

Notes on protecting administrator accounts

A user with administrator privileges has extensive access and manipulation options in the system.

Therefore, ensure there are adequate safeguards for protecting the administrator accounts to prevent unauthorized changes. To do this, use secure passwords and a standard user account for normal operation. Other measures, such as the use of security policies, should be applied as needed.

2.3 General safety instructions

This device is compliant with the relevant safety measures to IEC, EN, VDE, UL, and CSA. You can get information on reliability of use of the device in the intended environment from our Service contact partners.

Quintessence

CAUTION

Observe safety instructions

Please note the legal information at the start of this document

You should not expand your device before you have read the relevant safety instructions.

WARNING

Risk of the device falling

If the device falls, because it is accidentally let go, this can lead to personal injury or damage to property.

Take appropriate safety precautions to prevent this danger.

CAUTION

Hazardous emission of light

For devices that are equipped with a camera, a camera LED for lighting and the camera's flash are located on the rear of the device.

The camera LED has been assigned the Risk Group 2 (Groupe de Risque 2) according to IEC/EN 62471 and can damage the eyes in case of improper use. The risk for the user depends on the use of the camera.

Do not look directly in the light beam of the camera LED when using the camera.

Keep a distance of at least 20 cm between your eyes and the camera LED.

CAUTION

Observe instructions

Please note that the protection level of the device is only assured if it is used within the planned parameters.

Repairs

WARNING

Damage to property and personal injury

Only qualified Siemens personnel are permitted to open and repair the device.
Unauthorized opening and improper repairs can cause considerable damage to property or danger for the user.

System expansions

CAUTION

Risk of damage to the system or the plant

The installation of expansions that are not intended for this device can damage the system and violate the radio-interference suppression regulations.

Only install system expansion devices designed for this device.

Contact your technical support team or where you purchased your PC to find out which system expansion devices may safely be installed.

NOTICE

Warranty

If you install or exchange system expansions and damage your device, the warranty becomes void.

NOTICE

Accessory

For a list of accessory please refer to the siemens industrial mall.

- Industry Mall (<https://mall.industry.siemens.com>)

NOTICE

Power cords

Only country specific certified power cords has to be used.

Battery

This device is equipped with a lithium battery for supplying power to the internal real-time clock. Batteries may only be replaced by qualified personnel.

CAUTION

Risk of explosion when replacing and disposing of the battery

There is the risk of an explosion if the battery is not replaced as directed. Replace only with the same type or with an equivalent type recommended by the manufacturer. When disposing of batteries, observe the locally applicable legal regulations. Only the spare part 6AV7676-3AC10-0AA0 has to be used for replacement.

WARNING

Risk of explosion and release of harmful substances!

Do not throw lithium batteries into an open fire, do not solder, or open the cell body, do not short-circuit, or reverse polarity, do not heat up above 100 °C, follow the disposal instructions, and protect against direct exposure to sunlight, humidity, and condensation.

ESD guidelines

Modules containing electrostatic sensitive devices (ESDs) can be identified by the following label:

Strictly follow the guidelines mentioned below when handling modules which are sensitive to ESD:



- Before working with modules containing ESDs, you must discharge all your personal static e.g. by touching a grounded object.
- All devices and tools must be free of static charge.
- Always pull the mains connector and disconnect the battery before you install or remove modules which are sensitive to ESD.
- Handle modules fitted with ESDs by their edges only.
- Do not touch any wiring posts or conductors on modules containing ESDs.

2.4 Notes on ambient and environmental conditions

Application planning

Observe the following for device application:

- Do not place the device near heat sources such as heaters, hot air inlets, stoves, or other heat-generating equipment (including amplifiers or other heat-generating devices).
- Do not place heavy objects on the device, as that could damage the display.

- Do not place any objects and avoid exerting excessive force on the display, as this could break the glass.
- Never touch the screen surface with a ballpoint pen, pencil, or any other sharp or metallic object, as this could scratch the display.
Use your finger or a stylus to make inputs on the display.
- To maximize the service life of the backlight, set automatic turn off in the energy management options. Do not use screen savers or any other software that impede energy management.

Radiofrequency radiation

CAUTION

Immunity to radiofrequency radiation

The device has an increased immunity to radio frequency (RF) radiation in accordance with the specifications for electromagnetic compatibility in the technical specifications.

RF radiation, e.g. from a cell phone, may result in malfunctioning of the device. Persons may be injured and the plant damaged.

- Avoid RF radiation.
- Remove radiation sources from the environment of the device.
- Switch off radiating devices.
- Reduce the radio output of radiating devices.
- Observe the information regarding electromagnetic compatibility.
- Observe the information in the technical specifications.

2.5 Safety guidelines for transport

Before you set off

Observe the following information when you are traveling with the device:

- Save important data from the SSD drive.
- For safety reasons, switch off the radio component (WLAN) if you cannot be sure that the transmitted radio waves will not interfere with any electrical or electronic equipment in your vicinity.
- Disconnect the peripheral devices from the device.

2.5 Safety guidelines for transport

- If you want to use your device during a flight, first of all ask the airline company if you are permitted to do so.
- When traveling abroad, ensure the power adapter can be used with the local mains voltage. If this is not the case, you must acquire the appropriate adapter for your device. Do not use any other voltage transformers!

Note**Using the device in different countries**

Verify the compatibility of local mains and power cable specifications are compatible when using the PG abroad. If this is not the case, purchase a power cable that complies with the local conditions. Do not use connection adapters for electrical appliances in order to connect the device to them.

Damage from transport and storage**! DANGER****Device damage during transport and storage**

If a device is transported or stored without packaging, shocks, vibrations, pressure and moisture may impact the unprotected unit. If the packaging is damaged, this is an indication that the device has already been severely impacted by ambient conditions and may be damaged.

- See the note "Electric shock and fire hazard due to device damage".
- Keep the original packaging.
- Pack the device in the original packaging for transport and storage.

! DANGER**Electric shock and fire hazard due to device damage**

A damaged device may be under hazardous voltage and start a fire in the machine or plant. A damaged device has unpredictable properties and states. Death or serious injury may occur and the device, machine, or plant may malfunction.

- Prevent installation and commissioning of a damaged device.
- Label the damaged device and keep it locked away.
- Have the device repaired without delay.

Damage from condensation

NOTICE

Damage from condensation

If the device has been exposed to low temperatures or extreme temperature fluctuations during transport, it is possible that moisture has condensed on or inside the device (condensation).

Moisture can cause short-circuits in electrical circuits and damage the device.

- See the note "Electric shock and fire hazard due to device damage".
- Store the device in a dry place.
- Bring the device to room temperature before commissioning.
- Do not expose the device to direct thermal radiation from a heater.
- If condensation develops, wait approximately 12 hours or until the device is completely dry before switching it on.

2.6

Note on use

NOTICE

Possible restricted functions in case of non-validated function of the plant.

The device is tested and certified based on the technical standards. In some cases function restrictions can occur during the operation of your plant.

To avoid restrictions, validate the correct function of the plant.

Note

Ventilation of the device

The device is cooled through several ventilation slots: If the cooling air flow is impeded, the device may overheat and be damaged.

- Ensure that these ventilation slots are not covered or closed during operation.
- Do not place the device directly next to a wall or in an enclosed space.

Note

Requirements for base on which device is operated

Avoid any damage to the device from scratching or overheating.

Only place the device on a flat, even, clean and hard base.

Note

The device may only be powered from a power source that is classified as an energy-limited circuit in accordance with IEC 61010-1

2.7 Notes on battery operation

! WARNING**Risk of personal injury or damage to property due to improper handling of the battery**

A battery can cause burns, it can explode or release toxic substances.

Do not open or damage the battery. Do not expose battery to heat or fire. Keep the battery away from children.

! WARNING**Danger of damage to the device or destruction of the battery**

Only use the supplied battery or an original spare part.

! WARNING**Risk of damage to the device by foreign objects**

Always transport the device with the battery plugged-in. This prevents any foreign objects (e.g. paper clips) from entering the device through openings.

! WARNING**Risk of damage to the device caused by unprotected transport**

Do not transport the battery unprotected in your bag, briefcase or any other container because any metal objects in these carriers (e.g. car keys) may short-circuit the battery terminals. This may damage the battery or cause a fire.

! WARNING**Risk of damage to the device caused by water or splashing water**

The battery is not waterproof! Never submerge the battery in water and protect it from splashing water (rain, seawater).

! WARNING**Risk in case device is not fully sealed**

If the battery is leaky, avoid contact of the liquid with your skin, mucous membranes (eyes, mouth) or food and do not inhale any fumes. Use plenty of water and soap to clean any body parts that may have come into contact with the liquid.

! WARNING

Risk of damage to the device caused by pressure

Do not apply any pressure on the battery, do not drop it, do not damage it, and do not introduce any foreign objects.

! WARNING

Risk of damage to the device caused by metal objects

Keep unused batteries away from paper clips, coins, keys, nails, screws, or other small metal objects that could cause the contacts to be bridged. A short circuit between the battery contacts can cause burns or a fire.

! WARNING

Damage due to damaged or altered devices

Do not use a damaged or modified battery. Damaged or modified batteries can behave unpredictably and lead to fire, explosion, or risk of injury.

! WARNING

Risk of damage to the device caused by charging outside the permissible temperature range

Observe all instructions for charging, and never charge the battery outside of the temperature range specified in the operating instructions. Incorrect charging or charging outside of the permissible temperature range can destroy the battery and increase the risk of fire.

! WARNING

Risk of damage to the device caused by unauthorized customer service centers

Never service damaged batteries. All battery maintenance should only be performed by the manufacturer or authorized customer service centers.

! WARNING

Risk of damage to the device caused by pointed objects or external forces

Pointed objects, such as nails or screwdrivers, and external force can damage the battery. An internal short circuit may occur and the battery may burn, smoke, explode, or overheat.

! WARNING

Risk of damage to the device caused by frost

Do not expose the battery to freezing temperatures. The longer the cells are exposed to low temperatures, the greater the risk of capacity losses and dangerous cell damage. For example, do not store batteries in an unheated garage in the winter.

Disposal

Lithium ion batteries can be recycled. Their components can be used as raw materials for new batteries or other products. A requirement for effective recycling is the collection of used batteries.

NOTICE**Risk of fire - Hazardous to people and the environment**

The improper disposal of batteries may cause fire.

Observe the local regulations for the disposal of recyclable materials.

Dispose of batteries properly.

Battery operation

The battery (lithium ion) enables mobile use of the device, independently of an external power supply. It also protects against data loss in the event of a power failure.

The battery will start charging as soon as the device is connected to the power supply. In doing so, the following conditions are important:

- When the device is switched off the charging process takes around 2 hours and 30 minutes.
- When the device is switched on, the duration of the charging process depends strongly dependent on the system load and can be extended accordingly.
- The charging process is terminated as soon as the battery is fully charged.
- A charged battery will discharge itself during storage (depending on the temperature, and whether or not it is installed) over a few months. It will then have to be recharged.
- The battery charging is terminated when the battery is fully charged or if, for example, the upper temperature limit for charging is exceeded. You can check the battery charge level in Windows.
- At high ambient temperatures the battery is protected against overheating by reducing the charging current. The charging process can hereby extend accordingly.
- The battery protects itself at higher ambient temperatures by decreasing the charging capacity. If the device is operated at lower ambient temperatures again, the charging capacity of the battery increases again.

If, with a connected power supply unit, the battery LED lights up green, the battery is full and will not be charged any further.

Current consumption in battery operation

You can reduce the off-state battery power consumption of your device to the minimum by disabling the Intel® AMT in the BIOS. As a precaution, you should remove the battery from the device if you are planning on not operating the device for several months. Ideal storage conditions for the battery pack: Ambient temperature of approximately 20 °C and battery charging state of approximately 50%.

Note

The battery pack may be completely or partially discharged (e.g. due to self-discharge) during commissioning. Prior to completion of the discharge, when merely a residual charge is existent, the LED battery in the battery operation lights up red as a warning. End your work and save your data. There are now only a few minutes battery running time left.

Please note that for a complete disconnection from the electricity supply network the power plug must be pulled out.

Service life of the battery

Due to the technology used, the capacity of the lithium ion battery used in the device reduces with each charge/discharge process. A gradual reduction in capacity also takes place if stored at too high or too low temperatures. The operating times of one battery charge in a network-independent operation can therefore gradually reduce over time.

The battery has a typical life span of c. 300 charges and is therefore designed in such a way that with standard handling within six months after purchase of your device it can still be charged and discharged. A loss of capacity over time is technology-dependent and, as with all manufacturers of comparable devices, it is excluded from the warranty. In the case of a significant drop of efficiency we recommend that you replace the battery. Use only Siemens original spare parts.

You should note the following with regard to the life span of the battery:

- If possible, the battery should always be completely discharged/charged.
- Frequency of use: The more often the battery is used, the faster it reaches the end of its effective life span. A lithium ion battery has a typical life of around 300 charge cycles.

2.8

Notes on barcode reader and RFID reader

The barcode reader and RFID reader used are open systems that are freely configurable. Various options are available to increase industrial security.

2.9

Safety notices for WLAN and Bluetooth operation

- The radio waves necessary for WLAN and Bluetooth can cause interference in hearing aids (unpleasant buzzing) and in the onboard electronics of vehicles. To prevent interference, switch off the device in aircraft, or when driving a vehicle.
- Radio waves caused by WLAN and Bluetooth may lead to malfunctioning of life-support systems. Switch off the WLAN and Bluetooth function if you are in the proximity of such systems, e.g. hospitals, medical electronic systems.
- The range of the wireless connection and the achievable data transmission rate depend on the ambient and environmental conditions.
- A WLAN and Bluetooth connection is not tap-proof. Unauthorized third parties can then receive data.
To protect the transmitted data, WLAN and Bluetooth have different encryption methods. We recommend that you activate an encryption in accordance with your WLAN and Bluetooth environment.
- If possible, do not bring the WLAN and Bluetooth connection in the vicinity of the following devices as the operation of these devices may result in faults or the complete failure of the WLAN and Bluetooth connection:
 - Microwaves
 - Wireless video-audio transmission systems
 - Wireless telephones (DECT)

CAUTION

Risk of interference with pacemakers

The radio waves of WLAN and Bluetooth may interfere with pacemakers.

If you wear a pacemaker, keep a minimum distance of 20 cm from the device when WLAN or Bluetooth is activated.

CAUTION

Danger of explosion

The radio waves transmitted by WLAN and Bluetooth may trigger an explosion or fire.

Switch off WLAN and Bluetooth of the device if you go in the vicinity of flammable gases or in an explosive environment (e.g. paint shop).

Siemens is not responsible for radio or television interference that has been caused by unauthorized changes to this device. Furthermore, Siemens shall not be held responsible for the use or replacement of connecting cables and devices that have not been recommended by Siemens. The user alone is responsible for remedying faults that have been caused by such an unauthorized change, or for the use or the replacement of the device.

2.10 Notes on device and system extensions

Device and system extensions

CAUTION

Fire hazard due to overheating of the device

Expansion cards generate additional heat. The device can overheat or cause a fire.

- Observe the safety and installation instructions for the expansion cards.
- Observe the max. permissible power consumption values.

NOTICE

Damage caused by device and system extensions

Device and system expansions may contain faults and affect the entire device, machine or plant. They may also violate safety rules and regulations regarding radio interference suppression.

If you install or replace device or system expansions and damage your device, the warranty is voided.

- Always disconnect the power plug before you open the device.
- Only install device or system expansions designed for this device.
- Observe the information on "Electromagnetic compatibility" provided in the technical specifications.

Contact your technical support team or the point of sale to find out which device and system expansions are suitable for installation.

Limitation of liability

- All technical specifications and approvals of the device only apply if you use expansion components that have a valid CE approval (CE mark).
- Observe the installation instructions for expansion components in the associated documentation.
- UL approval of the device only applies when the UL-approved components are used according to their "Conditions of Acceptability".
- We are not liable for functional limitations caused by the use of third-party devices or components.

2.11 FCC Warning

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.

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

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
-

2.12 RF Exposure Information and Statement

The SAR limit set by the FCC (USA) is 1.6 W/kg averaged over one gram of tissue. The SIMATIC IPC MD-34A base system (FCC ID: U9A-MD-34A) was tested against this SAR limit, with the highest SAR value reported as 0.522 W/kg during typical body-worn operation at 0 mm separation from the user's body to the rear of the device.

The EOL compartment (FCC ID: 2BMIMSIDISMP-S-T2), attached permanently to the rear side of the SIMATIC IPC MD-34A, includes a 13.56 MHz RFID reader. Due to the low operating frequency and power levels, the RFID reader within the EOL compartment is exempt from separate SAR evaluation. Compliance with FCC RF exposure requirements is demonstrated through the tested configuration of the overall SIMATIC IPC MD-34A base system.

To maintain compliance, accessories used must maintain a 0 mm separation distance from the user's body to the rear side of the device. Belt clips, holsters, or similar accessories must not contain metallic components. Using accessories that do not meet these requirements could result in non-compliance with FCC RF exposure guidelines and should therefore be avoided.


2.13

Body-worn Operation

This device was tested for typical body-worn operations. To comply with RF exposure requirements, a minimum separation distance of 0mm must be maintained between the user's body and the handset, including the antenna. Third-party belt-clips, holsters, and similar accessories used by this device should not contain any metallic components. Body-worn accessories that do not meet these requirements may not comply with RF exposure requirements and should be avoided. Use only the supplied or an approved antenna.



CAUTION:

All cases mark with  are showing potential risks and have to be followed under all circumstances.

Setting up and connecting the device

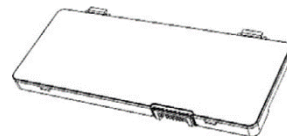
3.1 Preparation

3.1.1 Scope of delivery

Tablet



Standard rechargeable battery



Power supply unit



Power supply cord



3.1.2 Checking delivery



WARNING

Electric shock and fire hazard due to damaged device

Damaged devices due to improper storage or transport might lead to personal injury and substantial damage to equipment.

Procedure

1. Check the delivery unit for any signs of visible transport damage.
If any transport damage is present at the time of delivery, lodge a complaint at the shipping company in charge. Have the shipper confirm the transport damage immediately.
2. Unpack the device at its installation location.
3. Keep the original packaging in case you have to transport the unit again.
4. Check the scope of delivery (Page 31) for completeness and damage.
Please inform the delivery service immediately if the package contents are incomplete or damaged or do not correspond with your order.
5. Please keep the documentation in a safe place. It is required for initial commissioning and is part of the device.
6. Record the Device identification data (Page 32).

3.1.3 Device identification data

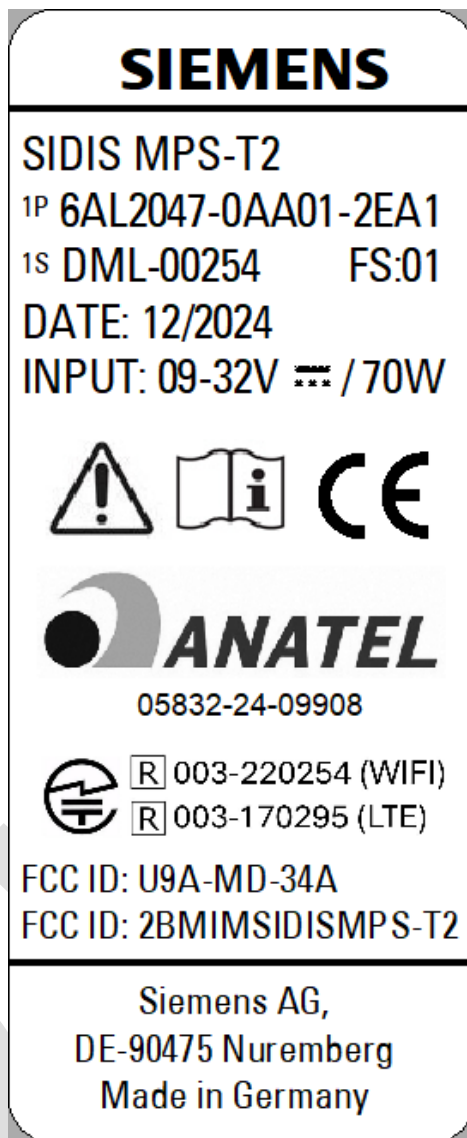
The device can be clearly identified with the help of the identification data in case of repairs or loss.

The figures below are examples. The data of your device can differ from the data in these examples.

Rating plate

The rating plate is located on the rear of the device.

Example:



3.1 Preparation

Draft

In the digital nameplate, you will find product data, manuals, declarations of conformity, certificates and other helpful information about your product.

COA label (Certificate of Authenticity)

The COA label (Certificate of Authenticity) is located on the rear of the device.

Write down identification data

1. Transfer the identification data in the table shown below into the "Value" column.
In the "Source" column you can find information on where you can find the required value.


Identification date	Source	Value
Order number	Rating plate	6AV...
Serial number	Rating plate	S VP...
Product Key (Microsoft Windows Product Key)	COA-label	
Ethernet address 1	See BIOS selection menu > SCU > Menu "Advanced" > "Peripheral Configuration"	

Equipment installation requirements

1. The device MPS-T2 is a mobile device which does not need to be installed.

3.2 Setting up the device

3.2.1 Replacing the battery

 WARNING
Observe danger notices Observe the notes and information on proper use and disposal of the battery in the "Notes on battery operation (Page 23)" section.

Requirement

1. Switch off the tablet. Wait until the tablet has shut down completely.
2. Remove all cables connected to the tablet.
3. Flip the tablet over and set it down on a soft surface with the rear side facing up.

Removing the rechargeable battery

For insertion of cards, an extended period of non-use, or replacement, remove the battery as follows:



Figure 3-1 Remove the battery

1. Turn the device over so that it is lying on a flat surface.
2. Push the battery lock to the "Unlocked" position.
3. Press and hold down the battery lock while lifting the battery out of the battery compartment.

Inserting the rechargeable battery



Figure 3-2 Insert the battery

1. Push the battery lock to the "Unlocked" position.
2. Insert the battery, contact pins first, into the battery slot and press it down.
When the battery is inserted, it should sit flush with the battery compartment.
3. Push the battery lock to the "Locked" position.

3.2.2 Inserting the SD card

Requirement

1. The battery of the tablet is removed.
2. Flip the tablet over and set it down on a soft surface with the rear side facing up.

Inserting the SD card

An optional microSD card increases the memory capacity of your tablet by up to 2 TB.



1. Open the protective cover on the microSD slot by pulling out the retainer.
2. Slide the microSD card into the slot with the contacts facing down (see figure).
3. Gently press the card again so that it is fully seated in the slot.
4. Close the protective cover.
5. Reinsert the rechargeable battery.

Removing a microSD card

For memory expansion, an extended period of non-use, or replacement, remove the microSD card as follows:

1. Open the protective cover on the microSD slot by pulling out the retainer.
2. Briefly press against the microSD card to release it, and then pull it out all the way.
3. Reinsert the rechargeable battery.

3.3 Connecting the device

3.3.1 Notes on power supply

The battery charges when the device is connected to the power supply.

Note

Always operate the device with the battery inserted.

For the proper operation of the device with external power supply, a battery must be also be inserted.

WARNING

Power supply only with the original power supply unit

Only use the supplied original power supply unit for the power supply of the device. This applies to both the connection to the device and to the connection to the docking station. It is used to supply power to the device in mains operation with 120 V and 230 V power supply networks.

The setting of the voltage range takes place automatically.

Note before connecting to mains operation

WARNING

Personal injury or damage to when device is operated on the wrong power supply system

If you connect the device to an unsuitable power supply system, the device receives voltages and currents that are too high or too low. Bodily injury, malfunctions, or device damage may result.

- The permissible supply voltage of the device must match the local supply voltage.
- Operate the device only on grounded power supply systems (TN systems in accordance with VDE 0100 Part 100 or IEC 60364-3).
- Operation on ungrounded or impedance-grounded networks (IT networks) is not permitted.

WARNING

Danger of damage to the device or destruction of the battery

Only use the supplied battery or an original spare part. You can find more information on the original replacement parts of the device in section: "Notes on battery operation (Page 23)".

What to keep in mind during mains operation

WARNING

Risk of fire and electric shock

The On/Off button does not completely isolate the device from the power supply. If the device is switched off with the On/Off button, there is still a risk of electric shock and fire, for example, if the device or the connection cables are damaged, or in the event of improper use.

When working on the device or if the device is not used for a long period of time, always disconnect it fully from the power supply. Shut down the operating system and if you are using the device in mains operation, pull out the power plug.

Localized information

For the United States and Canada

For the United States and Canada, a CSA or UL-listed power cord must be used.

The connector must be compliant with NEMA 1-15P (NEMA; National Electrical Manufacturers Association).

- **120 V/240 V supply voltage**

A flexible cable with UL approval and CSA marking must be used. In addition, the cable must exhibit the following properties:

- SPT-2 or SVT with three wires
- At least 18 AWG conductor cross-section (AWG: American Wire Gauge, US standard for cable diameter)
- Max. length of 4.5 m
- Connector 15 A, min. 125 V

For countries other than the USA and Canada

- **230 V supply voltage**

This device is equipped with a safety-tested power cord. If you choose not to use this cable, you must use a flexible cable of the following type: At least 18 AWG (0.82 mm²) conductor cross-section and 15 A/250 V connector. The cable set must conform to the safety regulations of the country in which the devices are installed, and bear the prescribed markings in each case.

3.3 Connecting the device

3.3.2 Connecting the power supply

Procedure

The tablet is supplied with power either externally from the electricity supply network (grid power) or from the internal rechargeable battery. Recommendation: During first commissioning, operate the tablet with mains power.

1. Open the protective cover on the power supply connection by pulling out the retainer on the outside of the tablet.
2. Plug the DC cable of the external power supply unit into the connection socket on the device or docking station.
3. Plug the three-wire connector of the power supply cord into the power supply unit.
4. Plug the power plug of the power supply cord into a power outlet with grounded protective conductor.

The device is operated with grid power. The rechargeable battery is charged during operation.

The "Battery" status display indicates the various operating states, see "Status displays (Page 14)" section.



3.3.3 Power supply through vehicle interface

Power supply of the device is also possible via the OBD connector on the diagnostic unit. In case of simultaneous infeed via the docking station (external power supply unit) and the OBD connector, the OBD connector has a lower priority.

Power supply of the device via the OBD connector is rated for cars and trucks in the range of 9V to 32V, max. 70 Watt.

You can find addition information on power supply and battery charge in section "Charging the device (Page 50)".

Commissioning the device

4.1 General information on commissioning

NOTICE

Risk of damage to the device!

Make sufficient allowances for the device to warm up to room temperature before you put it into use. If condensation develops, wait at least 12 hours before switching on the device.

Requirements for commissioning

- The power supply is connected or the battery is fully charged.

4.2 Switching the device on and off

The operating system and system software of your device are preinstalled on the hard disk.

Following the initial switch on, the operating system is set up automatically on the device.



CAUTION

Device damage when switching on the device

If the Windows setup or startup is interrupted, or a default value in the BIOS setup is changed, Windows will not be installed correctly or will not start completely. This damages the device and jeopardizes the operational safety of the machine and plant.

- Do not press the power button several times in a row.
- Do not switch off the device while Windows is being set up or started. Secure the device to prevent accidental switch off.
- Do not pull out or insert the power plug. Secure the power plug during operation.
- Do not change the default values in the BIOS setup.
- Do not touch the screen, buttons, or external keyboard or mouse while Windows is starting.

4.3 Setting up Windows 10 IoT Enterprise

Switching on the device

1. Press power button (see "Power button (Page 13)"). The blue "Operation" status display illuminates.
2. Follow the instructions on the screen.
The following steps should only be performed the first time the device is switched on in its factory state: see next section "Setting up Windows 10 IoT Enterprise (Page 41)".
3. Follow the steps of Windows OOBE processes.

Switching off the device

NOTICE
Forced shutdown If you press and hold down the power button for ten seconds or longer , the tablet is forcibly switched off. In doing so, any programs still open may be damaged and data may be lost. Only press the power button during operation in an emergency.

1. Ensure that you have closed all programs open on the desktop.
Apps on the start screen do not have to be closed.
2. Select **Start** --> **Power**, and then select **Shut down**.
3. Wait until the tablet has shut down and all status displays are off.

See also

Device identification data (Page 32)

4.3 Setting up Windows 10 IoT Enterprise

Requirement

The tablet has been switched on for the first time.

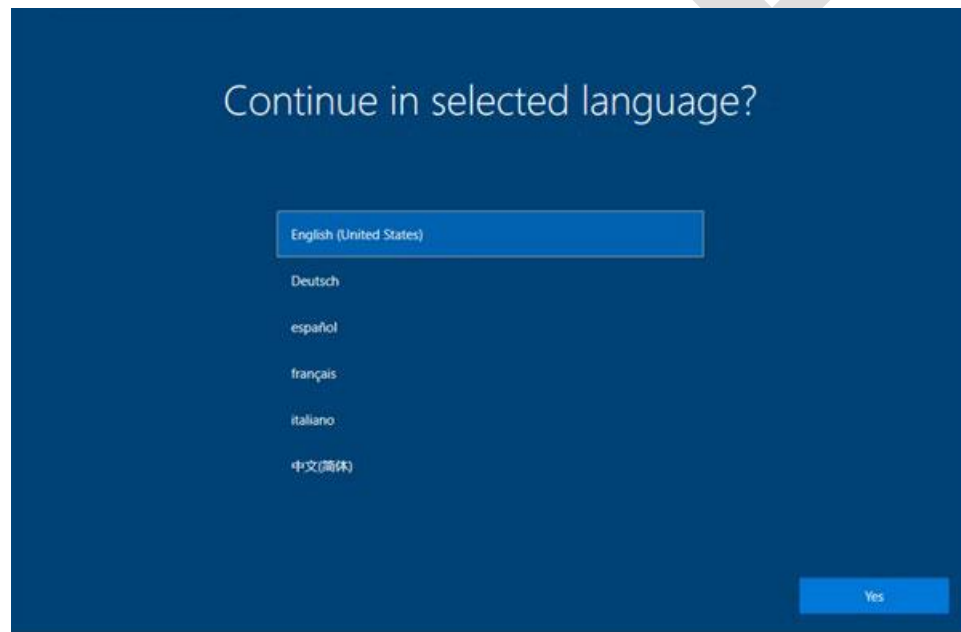
Procedure

Follow the following steps to complete the Windows 10 IoT Enterprise set-up process.

1. Select your preferred app language, preferred keyboard layout, and time zone and press "Next".

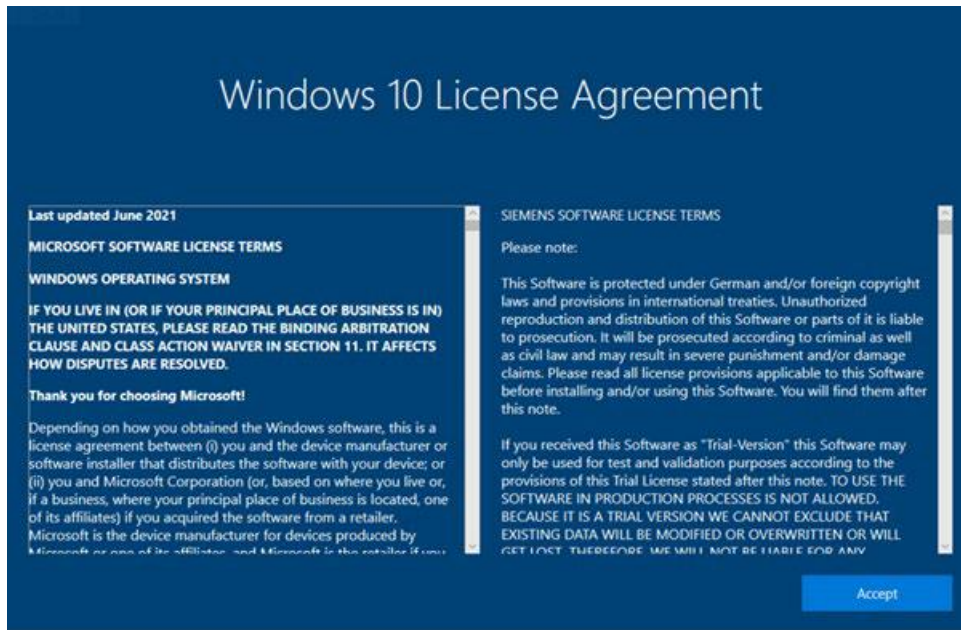
Note

If you selected "English", there is only one auto-restart during set-up process. If you selected other language, there are two auto-restarts.



4.3 Setting up Windows 10 IoT Enterprise

2. On the "Here's the EULA" of Microsoft & Siemens, read the license agreement on the screen and then press "Accept".



3. Windows attempts to establish a connection to network. If you do not want a network connection, press "Skip this step". You can also set up network later.

Note

If you did not select English in the first step, the device will automatically restart no matter which Internet connection is established.

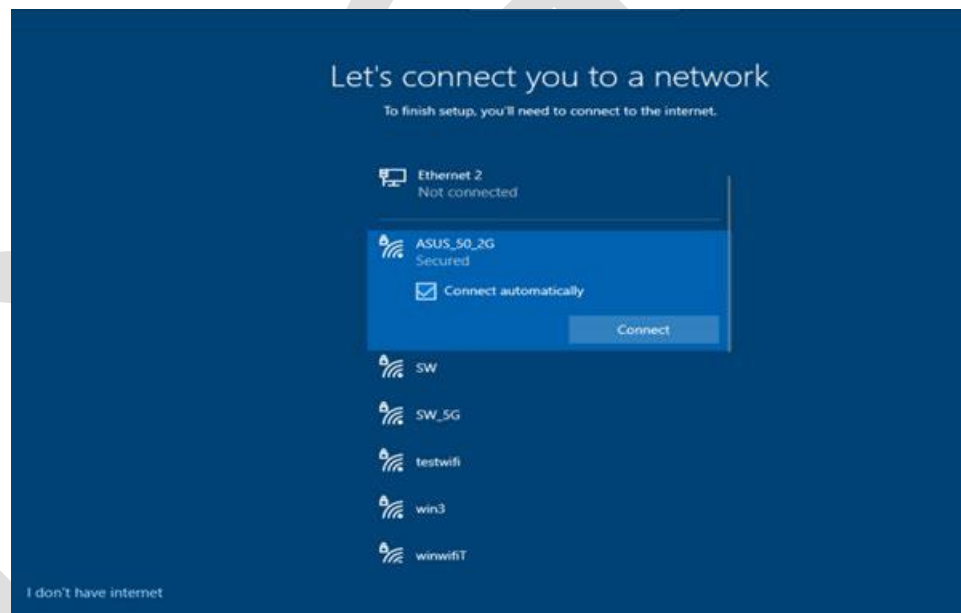
Public networks are not secure

Select "Public network" is not secure if you do not know all the computers on the network. For example, you are in a cafe, at the airport, or using mobile broadband in an untrusted public network. In such networks, other participants can steal and manipulate your data and introduce viruses and trojans, thereby damaging the tablet.

On public WLAN, ensure password protection and set up a suitable firewall on the tablet.

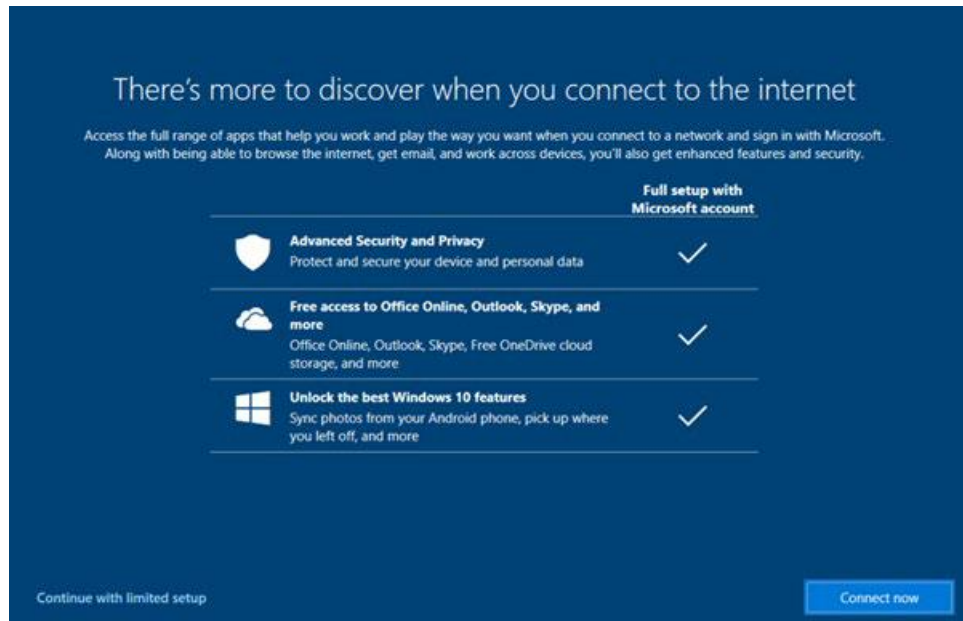
Select the network on which you use the tablet the most.

- Public: Your device is not visible to other devices in the network.
- Private: For trusted networks, e.g. home or company network. Your device is visible to other devices, e.g. printers.

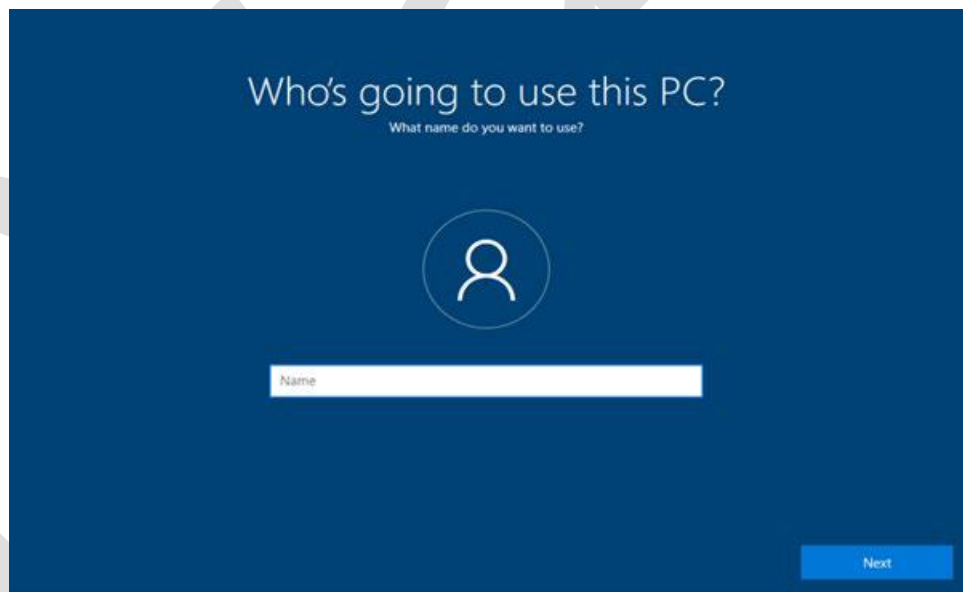


4.3 Setting up Windows 10 IoT Enterprise

4. For the quickest set-up, select "Continue with limited setup" in the lower-left corner. If you want to keep the previous internet connection, click **Connect now**.

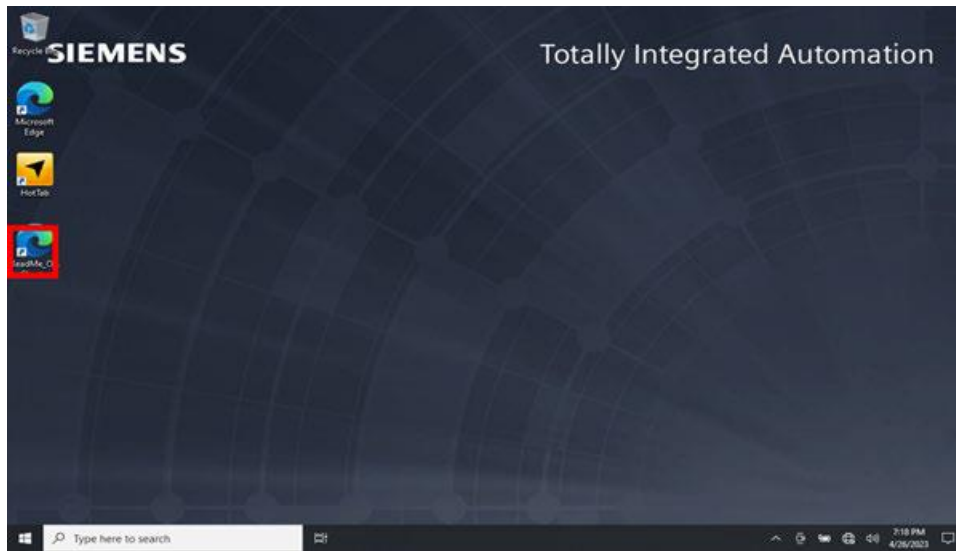


5. To create a local Microsoft account, enter your user name, password, and password hint in the fields provided. Then press "Next".



Setting up Windows for the first time is now complete. After an auto-restart and login the desktop is displayed. You are now finished with the initial setup.

Click or tap "①" to view the OSS Readme of the device.



4.4

Installing MPS-T2-specific Software

Follow the following steps to complete the Windows 10 IoT Enterprise set-up process.

Operating the device

5.1 Note on the operation

5.1.1 Using the device

The MPS-T2 is designed to be used as a mobile test station. During testing it is connected to the OBD socket of the car and sitting on the steering wheel of the car, and in this situation, it operates more than 20cm from the user's body.

When transporting the MPS-T2 from one vehicle to the next, please use the carrying strap on top of the device.

5.1.2 Charging the device

The battery charges as soon as the device is connected to the power supply.

Adhere to the Notes on power supply (Page 37).

Connect the device to the power supply as soon as the "Battery" LED displays a battery capacity that is too low. You can find additional information in section: "Status displays (Page 14)".



WARNING

Power supply only with the original power supply unit

Only use the supplied original power supply unit for the power supply of the device. This applies to both the connection to the device and to the connection to the docking station. It is used to supply power to the device in mains operation with 120 V and 230 V power supply networks.

The setting of the voltage range takes place automatically.

The following methods are available for charging the device:

Charging the device in the docking station

- Connect the external power supply to the docking station.
- Place the device correctly in the docking station.

Charging the device with external power supply unit

- Connect the external power supply unit to the device.
- Operate the device during the charging operation only on a table and not in mobile mode.

5.1.3

Using SD card

You can use the following cards:

- microSD cards

5.1 Note on the operation

For information on the location of the microSD card reader, see the "Inserting the SD card (Page 36)" section.

The contact areas of the card face downward and point toward the display. When inserting the card, pay attention to the correct positioning of the card.

To remove the card press it lightly towards the device.

The card is operated by a push-push function.

NOTICE
Do not insert or remove cards while in use.
Inserting or removing a card while it is in use could damage it.
The card may not be removed as long the LED is lit, see section "Status displays (Page 14)".
Observe the ESD guidelines (Page 91).

5.1.4 General information about WLAN and Bluetooth

The device supports Bluetooth to standard 5.3.

The device is built-in a Wireless LAN (WLAN), i.e. you are **not** assigned to a cable network.

Depending on the infrastructure and the access rights set by the network administrator, you have exactly the same access to files, the printer and to the Internet with WLAN as with cable network.

Support is provided for the WLAN frequency ranges 2.4 GHz and 5 GHz.

Depending on the surrounding conditions, you can create connections through walls or at distances in the open air of up to 100 m. But it depends on the environment you are in, If you are in a room with walls and floors, the range or distance of Wi-Fi connection will be decreased.

The on-board network adapter operates based on the following standards:

- IEEE 802.11 a
- IEEE 802.11 b
- IEEE 802.11 g
- IEEE 802.11 n
- IEEE 802.11 ac
- IEEE 802.11 ax

The IEEE standard offers two modes of operation, the ad hoc mode (Peer to Peer) and the infrastructure mode.

Ad hoc mode

The ad hoc network refers to a wireless network that is established directly between several computers, whereby all computers must have a WLAN facility. No additional devices are necessary.

Infrastructure mode

The infrastructure network uses access points to connect computers to wired networks with the aid of WLAN. These can be a local network (e.g. company networks) or a global network (e.g. Internet).
More detailed information on configuring and operating the WLAN can be found in the online help of the WLAN network adapter.

5.2

HotTab

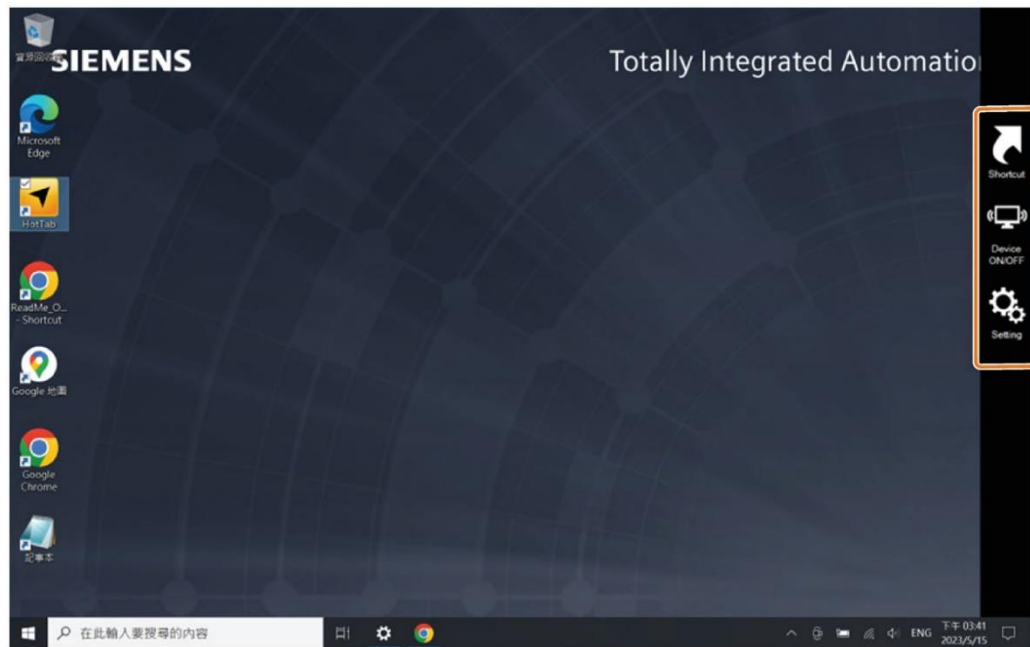
HotTab manages the built-in functions of the SIDIS MPS-T2, it controls the hardware functions directly.

- Shortcuts for quick access to Windows programs
- Turning hardware functions on and off
- Energy management and function keys




When Windows is started, HotTab is started in the background and runs as a service.



To display the HotTab functions, press the "HotTab" icon: The HotTab toolbar appears at the right edge of the screen.



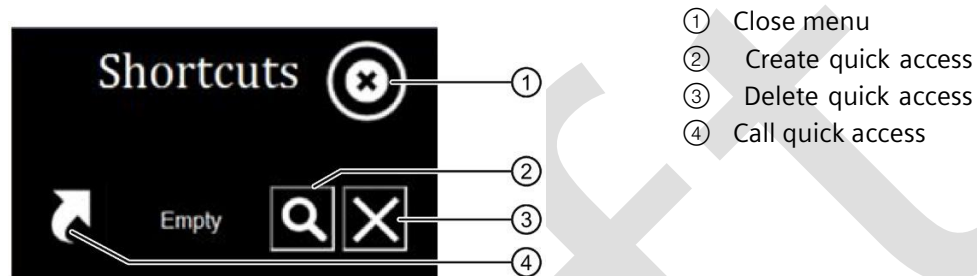
The icons have the following meanings and functions:

Icon	Meaning	Function
	Shortcut (Page 51)	Enables you to create shortcuts that access Windows programs and apps directly.
	Device ON/OFF (Page 53)	Enables you to directly switch the hardware functions of the tablet on and off using icons: <ul style="list-style-type: none"> • Connections (WLAN, WWAN (4G/LTE), GPS, Bluetooth) • Camera • Status displays and light sensor • Barcode reader • External GPS antenna
	Settings	Allows you check the following information: <ul style="list-style-type: none"> • Check the information for PC, battery, updates • Programming function keys (Page 53) • Adjusting brightness and volume • Device settings such as energy management and function key assignment.

5.2.1 Shortcut

The "Shortcuts" HotTab menu allows you to create software shortcuts and quickly access software programs in just a few steps.

- Eight empty program places for quick access.
- Quick access to every executable ".exe" file installed on the tablet.



Creating a new quick access

1. Press the "Quick access" icon in the HotTab toolbar. The "Shortcuts" HotTab menu opens.
2. Press the ② button next to an empty program slot "Empty". A file browser appears.
3. Browse the file system for the desired "<Program>.exe" and close the file browser with "Open".

The quick access is saved.

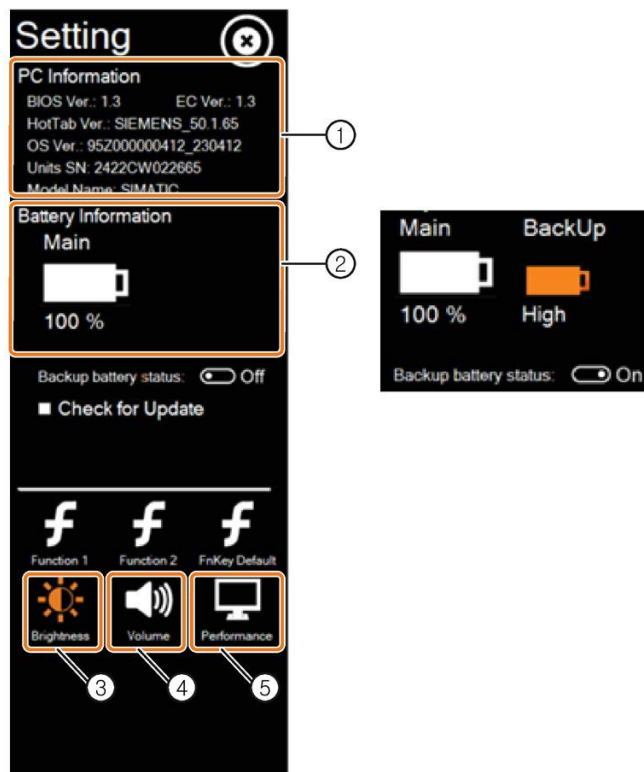
Delete quick access

Press the ③ icon next to the program name. The program slot becomes free again "Empty".

Call quick access

1. Press the "Quick access" icon in the HotTab toolbar. The "Shortcuts" HotTab menu opens.
2. Press the ④ icon next to the program name. The program is started.

5.2.2 Settings



- ① **PC Information** Displays key information about this device. The information displayed varies depending on when the device was received and the version being updated.
- BIOS version and EC version
 - HotTab version
 - OS Image version
 - Serial number of the device
 - Model name of the device
- ② **Battery information** Displays main and backup battery status.
- Main: indicates remaining power available in the device.
 - Scroll to "Backup Battery Status", the backup battery status displays.
 - "Check for Updates" checks for software updates in PC Information.
- ③ **Brightness** Adjust Display brightness
- ④ **Volume** Adjust volume brightness
- ⑤ **Performance** Set the device to High Performance (Default) or Power Saving

5.2.3 Programming function keys

Introduction


The specially designated physical buttons are preassigned with frequently used tablet functions.

Procedure

1. Press the "Settings" icon in the HotTab toolbar.
2. Press ① to set the Function 1.
 - ①: set the F1 icon
 - ②: set the F2 icon
 - ③: set F1 and F2 to the default function
3. Press ④ to set "Short press" application (short press means press for less than 2 seconds).
4. Select one of the five alternatives for Function 1 key short press.
5. Press ⑤ to set "Long press" application (short press means press for more than 2 seconds).
6. Select one of the five alternatives for Function 1 key long press.
7. Follow the same steps to set the Function 2.



Customize application for "short press" and "Long press"

If you want to program a function key as an application other than the application in the function list for short or long press, press  browse to the folder where the application is installed, and select the application.

5.2.4 Operating the built-in device

Depending on the configuration, your device is equipped with various hardware features, such as a camera and GPS. Not every device has all features.

You can check which hardware features are available along with their status. You can turn individual radio modules, e.g. WLAN, on or off selectively, depending on the situation.

Hardware feature	MPS-T2
Camera	✓
Wi-Fi	✓
LAN	-
WWAN 4G/LTE	-

5.2 HotTab

Hardware feature	MPS-T2
Bluetooth	-
LED	✓
Battery hot	
Barcode reader ¹	✓
Light sensor	✓
Touch mode	✓

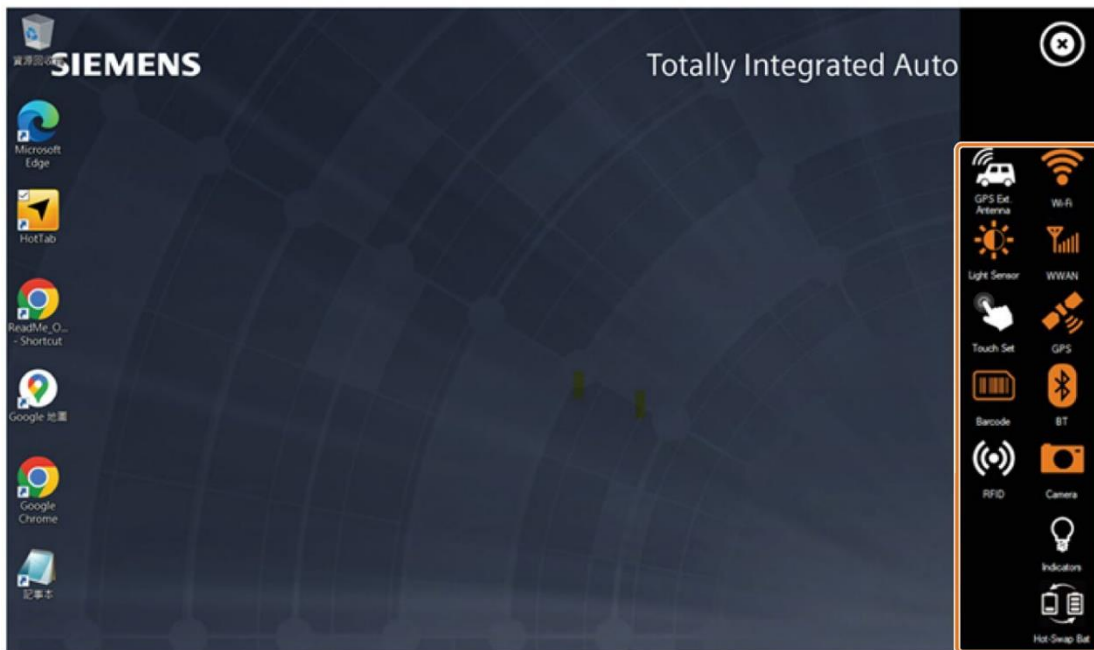
¹ There will be a beep sounds in the following situations.

- You activate the barcode
- You turn on the device or wake the tablet with the power button when the barcode function is enabled

Device ON/OFF

To turn on a built-in device on or off, follow the steps below:

1. Press the "Device ON/OFF" icon in the HotTab toolbar. A list of icons (see table below) is displayed on the right edge of the screen.
2. Check whether the function has been turned on (status = activated).
If the function has been deactivated (white), tap on the icon to switch on the function (orange).



3. Observe the notes and additional steps to be taken in the following table.

NOTICE










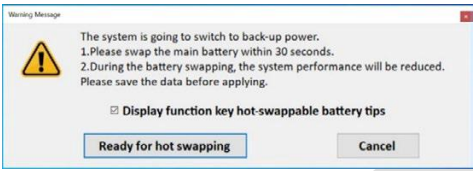



Risk of data loss and device damage from battery hot swapping


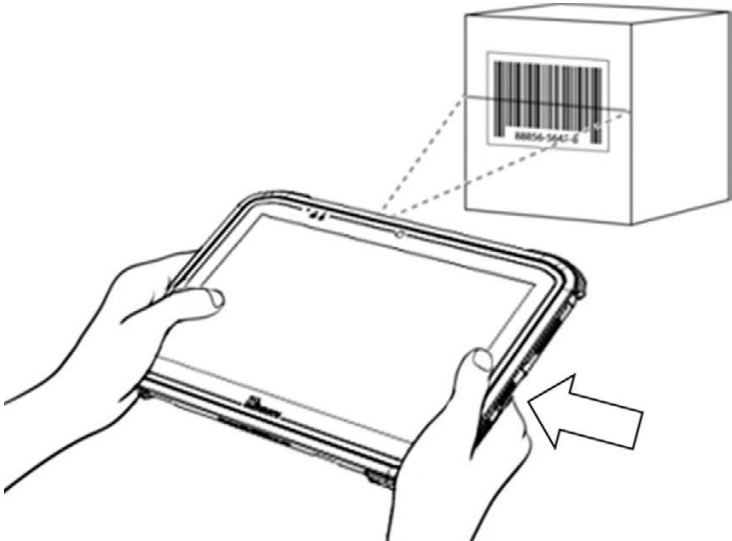

The rechargeable battery can be swapped during operation without switching off the tablet. If the integrated back-up battery has insufficient power for this or is not activated, the tablet de-energizes. Irrevocable data loss and damage to the tablet may result.

- Back up your data from the ongoing operation.
- Press the "Settings" icon in the HotTab toolbar. If the charge level of the back-up battery is "Low", first charge the battery from the power supply unit.
Do **not** press the "Battery hot swap" icon and do **not** remove the battery as long as the charge level of the back-up battery is "Low".
Charge the integrated back-up battery every 2 months to avoid deep discharge.
- Press the "Battery hot swap" icon **just before** you swap the battery during operation. This activates the back-up battery.

Observe the notes and additional steps to be taken in the following table.




Icon	Hardware function	Notes and additional steps
	WLAN	<ol style="list-style-type: none"> 1. Turn on the WLAN in the "Device ON/OFF". 2. Open the network connection via the icon in the Windows Notification Center. A list of available wireless networks is displayed. 3. Double-click on a network to establish a connection to it. When prompted, enter the network ID and password. <p>The "Network connection" icon in the Windows Notification Center shows the connection status: The more bars, the better the connection.</p>
	WWAN 4G/LTE	<p>Requirement: The SIM card has been inserted (4G/LTE devices), see "Inserting the SD card (Page 36)" section.</p> <p>The "Network connection" icon in the Windows Notification Center shows the connection status: The more bars, the better the connection.</p>
	GPS	Only required if a running program uses the GPS function for determining the location or for positioning.
	Bluetooth	<p>To start the Bluetooth, you need to do the following tasks.</p> <ol style="list-style-type: none"> 1. Select Start > Settings > Bluetooth & devices, then turn Bluetooth on. 2. Turn on the Bluetooth in the "Device ON/OFF". 3. Open the Bluetooth shortcut menu via the icon in the Windows Notification Center. 4. To add a device, select "Add Bluetooth device". Windows automatically searches for any Bluetooth devices. 5. Select the Bluetooth device to be connected and follow the instructions on the screen. <p>When the coupling is complete, you can use the Bluetooth device.</p>

Icon	Hardware function	Notes and additional steps
	Camera	<p>Caution: This function may emit harmful optical radiation. Do not look at the switched-on lamp. There is risk of eye damage.</p> <p>To start the camera, you need to do the following tasks.</p> <ol style="list-style-type: none"> 1. Turn on the camera in the "Device ON/OFF" 2. open "HotTabCam UWP (Page 58)" <p>You can use HotTab UWP to switch on the front camera, the one at the top center of the screen.</p> <p>Note: If the UWP screen turns white after waking up, restart the UWP application.</p>
	LED	LED displays, see "Status displays (Page 14)" section.
	Battery hot swap	<ol style="list-style-type: none"> 1. A dialog box with a warning is displayed. Before swapping the battery during operation, select "Ready for hot swapping".  <p>To support battery replacement, the system performance and display brightness are reduced to a minimum.</p> <ol style="list-style-type: none"> 2. Within the next 30 seconds, remove the old battery and insert a new, fully charged battery into the battery compartment. 3. Press the "Settings" icon in the HotTab toolbar. If the charge level of the battery is not displayed correctly, check that the battery was inserted properly.
	GPS antenna, external	<p>Use this icon to switch between an internal and external GPS antenna. The vehicle docking station for the tablet supports an external GPS antenna via a standard SMA connector.</p> <p>Requirements:</p> <ul style="list-style-type: none"> • The tablet is correctly situated in the vehicle docking station. • The vehicle docking station has been connected to an external GPS antenna.
	Light sensor	<p>The light sensor controls the brightness of the screen.</p> <p>If the light sensor is turned on and the environment changes, you will need to turn the light sensor off and on again, and it will check the surrounding laminate to change the brightness of the LCD accordingly.</p>
	Touch mode	<p>Switches the operating mode of the touch screen. Select the desired option.</p> <ul style="list-style-type: none"> • "Hand/Rain Mode" for rain/liquid • "Stylus Mode" for stylus • "Glove Mode" for glove <p>You can find more information in the "Touch mode (Page 58)" section.</p>

Icon	Hardware function	Notes and additional steps
	Barcode reader	<p>Requirement: The barcode reader has been configured and set up, see "Barcode reader (Page 59)".</p> <ol style="list-style-type: none"> 1. Open the program that is to display the barcode. 2. Orient the tablet to the barcode as shown:  <ol style="list-style-type: none"> 3. To start the scan operation, press function key <Fn2> on the tablet. 4. Press the "Disconnect" button to disconnect from the barcode reader. To reconnect, press the button again.
	RFID	Switches the RFID Reader function on and off.

5.2.5 Touch mode

The tablet has three touch screen operating modes (touch modes) for different applications:

Icon image	Meaning	Application	Input option
	Hand/Rain (default setting)	In "Hand/Rain" touch mode, the touch screen does not respond to false inputs triggered by liquid drops. Once the liquid is removed, the touch screen accepts inputs you make with your bare fingers.	<ul style="list-style-type: none"> Passive stylus with rubber tip Bare fingertips
	Stylus	In "Stylus" touch mode, the touch screen accepts your inputs with the passive input stylus (included in the scope of delivery of the tablet).	<ul style="list-style-type: none"> Passive stylus with palm rejection Passive stylus with rubber tip Bare fingertips
	Glove	In "Glove" touch mode, the touch screen accepts inputs made when wearing a glove.	<ul style="list-style-type: none"> Fingers in glove Passive stylus with rubber tip Bare fingertips

5.2.7 Barcode reader

5.2.7.1 Configuring and setting up the barcode reader

All SIDIS MPS-T2 equipped with Barcode Readers are pre-initialized before shipping. You do not need to initiate it the first time you use it, just as the OS recovery is done. If the barcode-reader does not work for some reason, follow the instructions below.

Note

The 2D/1D barcode reader is integrated in the tablet and cannot be retrofitted. In order to use the reading function, ensure that your device has an integrated barcode reader prior to use.

The Barcode Reader is configured to use a serial COM port. Typically, the Barcode Reader is using the USB Serial Device (COM3). If the Barcode Imager is reconfigured, it may happen that the COM port number is changing.

By default, neither prefix nor suffix is configured.

With the following 2D code, the barcode reader can be set to the delivery state.



5.3 RFID reader

A RFID Reader which is the product from BALTECH AG is integrated in the rear-module with 13.56MHz frequency. It is 57 (48) x 35 x 9 mm and 11g. Through UART and 5V, it is connected with basic Tablet. As a compact module, it becomes a versatile embedded solution, e.g. automotive, industrial PCs areas.

Recording RFID tag

1. Press the key to activate the RFID reader Refer to Configuration of the function keys (Page 53).
The RFID reader is active within 30 seconds after activation.
2. Guide the RFID tag at the RFID reader.
3. The RFID tag is output at the current cursor position of an opened program.

5.4 EOL compartment

The EOL compartment on the rear side of the MPS-T2 contains the devices and functionality

- VCI (Vehicle communication interface) to communicate via OBD-cable with the car.
The following protocols are used: CAN, K-Line and DoIP
- Using the car voltage to power the MPS-T2
- RFID-Reader to read SIDIS RFID tags (optional)
- SRIF2002 radio (*RF Front-End, Receive only; 5.8GHz, No TX Path*) (not in the USA) *
- IR-PLI-Receiver (Infrared receiver diode) (optional)

**Receive mode is standard mode and the module don't receive a valid signal from the UART, i.e. it cannot enter transmit mode.*

Device maintenance and repair

6.1 Recycling and disposal

The devices described in these operating instructions can be recycled thanks to their low level of pollutants. Contact a certified disposal service company for electronic scrap for environmentally sound recycling and disposal of your old device, and dispose of it according to the relevant regulations in your country.

**WARNING****Risk due to unauthorized opening and improper repairs or expansions**

Improper procedure when carrying out expansions may result in substantial damage to equipment or endanger the user.

If you install or exchange system expansions and damage your device, the warranty becomes void.

6.3 Maintaining and caring for the touch screen

Maintenance interval

To maintain high system availability, we recommend the preventative replacement of those PC components that are subject to wear in accordance with the intervals for replacement indicated in the table below:

Component	Replacement interval
SSD	3 years

6.3 Maintaining and caring for the touch screen

The device is designed for low-maintenance operation. Nevertheless, you should clean the touch screen periodically.

Requirement

- Soft cleaning cloth
- Rinsing liquid or foaming detergent for the outside of the device

Quintessence**! CAUTION****Unintentional response when cleaning the device**

You risk unintentional actuation of operator controls if you clean the device while it is switched on. The device or controller may respond in unintentional ways. Personal injury or machine damage may result.

- Always switch off the device before you clean it.
- Alternatively, clean the touch screen during operation in locked state only.

Damage caused by unauthorized detergents

Using compressed air or steam cleaners, or aggressive solutions or scouring agents will damage the device.

Do not clean the device with compressed air or steam jets. Do not use aggressive solvents or scouring powder.

NOTICE**Damage to the protective coating**

The user interface of the touch screen has a special protective coating that prevents dirt from adhering to it. Wiping the surface of the display may damage the special protective coating.

- Only remove dirt on the display with a soft cloth. Do not use a paper towel.
- To remove stubborn dirt, you can gently blow on the affected area and then carefully wipe it with a soft cloth.

Proceed as follows:

1. Switch off the device or disable the touch screen by pressing the locking key.
2. Wipe the outside of the device with a soft cloth moistened with water or non-alkaline detergent.
Spray the detergent onto the cleaning cloth.
Do not spray directly onto the device.
3. Carefully wipe the display with a soft, lint-free cloth.
Do not use alcohol or detergents.
When cleaning the display, wipe from the edge of the screen inwards.
4. Unlock the touch screen by pressing the Locking key again.

6.4 Installing operating system, software, and driver

6.4.1 Recovering the tablet with the wizard(Recovery))

The tablet has a separate recovery partition on its hard disk, which enables fast recovery with a single mouse click. This partition utilizes approximately 20 GB of memory capacity.

NOTICE
Risk of data loss During recovery of the system partition, all data on the hard disk is deleted and the hard disk is rewritten. All files, user settings, and existing authorizations or license keys are lost! Before starting the wizard: <ul style="list-style-type: none">• Back up all your user data on an external storage medium.• Make a note of important settings in the operating system and in programs.• Start a safety backup in the operating system and in programs.

6.4 Installing operating system, software, and driver

Procedure

1. Connect the power supply unit to the tablet. Make sure that the tablet remains connected to the power source during the recovery operation.
2. Switch on the tablet. When the start screen appears, press the <Fn1> or <F6> key if you have connected an external USB keyboard.

The wizard recovery menu appears:

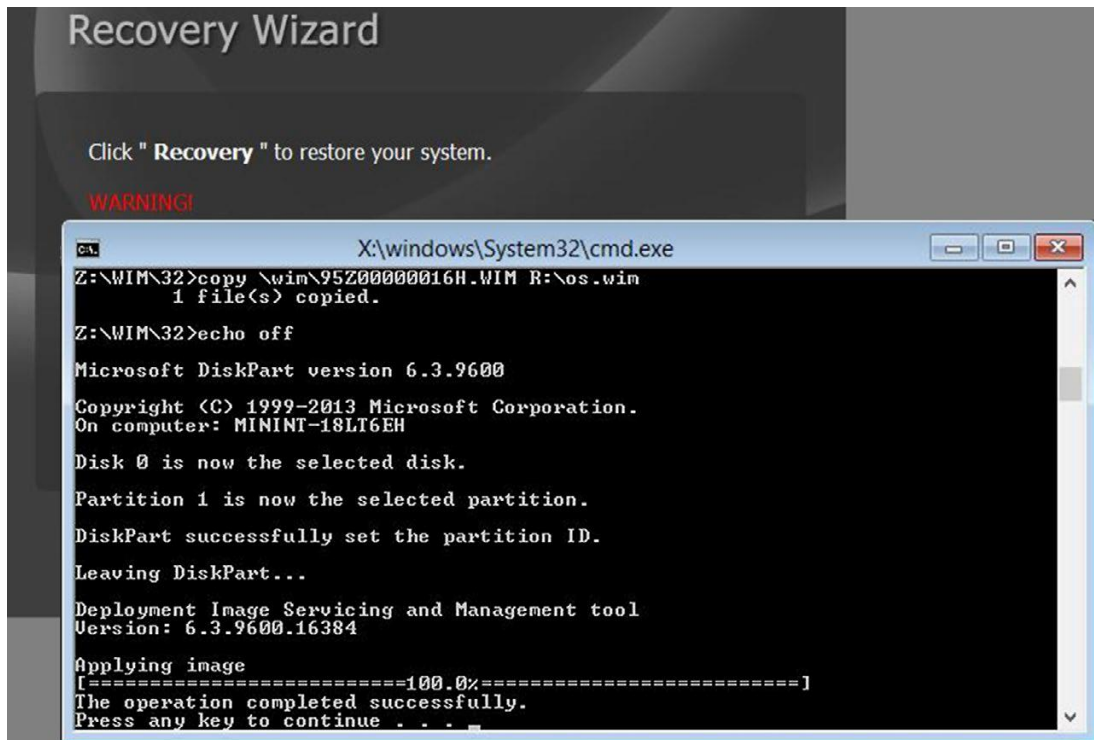


3. To continue, press the "Recovery" button.
4. A "Warning of data loss" message is displayed. Make sure that all your data has been backed up.



To continue, confirm with "Yes".

5. The recovery starts in a new window. At the bottom of the window, the progress is displayed as a percentage:
Wait and do not press any buttons or keys.



6. When 100% and completion of the operation is displayed as shown at the bottom of the window, press any button on the tablet.
The tablet is then automatically shut down.
The next time the device is switched on, the recovered operating system is set up on the device automatically.

6.4 Installing operating system, software, and driver

6.4.2 Updating the operating system

Windows

The latest updates for the Windows operating system are available on the Internet at Microsoft (<http://www.microsoft.com/en-us>) and on the device in the Start menu "Start > All Programs > Windows Update > Check for updates".

Other operating systems

Contact the corresponding manufacturer.

6.4.3 Setting up the language selection in Windows 10

You can set the display of menus, dialogs or other information, such as date and time, to a different language. For this purpose, you can either select one of the preinstalled languages or install a new language package.

The following command sequences are described in English. Depending on the default setting, they can be displayed in another language.

Changing the settings for language, region and formats of a registered user account

1. Choose:
"Start > Control Panel > Clock, Language, and Region > Region"
2. You can make the desired changes in the "Formats" and "Location" tabs.

Changing the settings for language, region and formats of the system account and the standard user account

You can change the settings for language, region and formats of the system account (for example, the language in the user login dialog) and the settings of the standard user account (standard setting for new users). The settings of the registered user are copied to the system account and the standard user account for this purpose.

1. Choose:
"Start > Control Panel > Clock, Language, and Region > Region"
2. You can make the required changes in the "Administrative" tab. You copy the settings by clicking the respective button.

Firmware/BIOS description (SIMATIC MPS-T)

7.1 Open firmware selection menu

Procedure

1. Switch on the device or restart the device.
2. Immediately after switching on the device, press the **<Esc>** key on the connected keyboard and hold it down. Or you can press "F2" button on the back of the device immediately after switching on the device.

The "Main Page" with the options of the firmware selection menu is open.

Firmware selection menu

The number of available options in the firmware selection menu depends on your device version.

The following options are available:

Option	Function
Continue	Exit firmware selection menu and continue the boot procedure.
Boot Manager	Specify the boot media from which to start, for example: <ul style="list-style-type: none">• Windows Boot Manager• EFI HTTP [IPv6]• EFI HTTP [IPv4]• EFI PXE 0 for IPv6• EFI PXE 0 for IPv4
Device Manager	When the network stack is enabled, the network device names that can be configured are listed.
	TLS Certificate Manager Import or delete certificates for TLS processing.
	RAM Disk Configuration Add or remove RAM disks.
	Driver Health Manager List all driver health instances.
	Network Device List Select the network device according to the MAC address.
Boot From File	Boot from a file or device.
Administer Secure Boot	Configure device startup in "Secure Boot Modus". Software modules will be loaded only when they are recognized by the BIOS or the operating system as safe.
Setup Utility	Start firmware configuration menu.

7.2 Configure firmware

You configure important firmware settings of your device using the firmware configuration menu "Setup Utility".

Procedure

1. Open the firmware selection menu (Page 70).
2. Touch the "Setup Utility" option on the "Main Page" or press "DEL" key on the connected keyboard.

Setup Utility menu

The individual setup parameters are distributed in different menus and submenus. Not all menus are included in each supplied device configuration. The following menu structure is an example:

Menu	Meaning
Main (Page 72)	Display system information, for example, BIOS version, processor and memory information.
Advance (Page 73)	Configure hardware.
Security (Page 75)	Security settings, for example, setting and user password.
Boot (Page 76)	Determine boot options, for example, boot order.
Exit (Page 77)	Save configuration and exit.

Button	Function
<F1>	Call help function.
<F5> or <F6>	Change firmware settings. The <F5> key is used to take the previous setting possibility or value. The <F6> key is used to take the next setting possibility or value.
<F9>	Load Optimal Defaults: The firmware settings are reset to the safe default values. The delivery state is restored. NOTICE: All current firmware settings are overwritten.
<F10>	Exit Saving Changes: All changes are saved. The device is restarted with the changed firmware settings.
<Enter>	A submenu previously selected with the arrow keys opens. The value of a firmware setting previously selected with the arrow keys can be changed.
[←] [→]	Navigate to a tab.
[↑] [↓]	Navigate to a submenu or a firmware setting. Confirm your selection with the <Enter> button.
<Esc>	A submenu or tab or the Setup Utility is exited. If the Setup Utility is closed after the confirmation prompt, changes to the firmware settings are discarded.

7.2.1 "Main" tab

Calling "Main" tab

Select: "Setup Utility (Page 71)" > "Main".

Device information

You can find important device information in the "Main" windows.

Device information	Explanation
BIOS Version	Current firmware version
Processor Type	CPU type
System Bus Speed	
System Memory Speed	
Cache RAM	Total L2 cache size
Total Memory	Total memory size
Controller0 Channel0 SODIMMO	
Platform Configuration	
CPUID	
CPU Speed	
CPU Stepping	
Number of processors	
Microcode Rev	Microcode Revision
GT info	
SMX/TXT	
PCH Rev/SKU	
GOP Ver	Version of Graphic Output Protocol (GOP) driver
Intel ME Version/SKU	
LAN PHY Revision	

Calling "Language"

You can select the supported display language for BIOS.

Select: "Setup Utility (Page 71)" > "Main" > "Language".

Firmware setting	Value	Setting in delivery state	Meaning
Language	English	<u>x</u>	BIOS display language.
	French		
	Chinese		
	Japanese		

7.2 Configure firmware

Calling "System Time" or "System Date"

Date or time settings.

Select: "Setup Utility (Page 71)" > "Main" > "System Time" or "System Date".

Firmware setting	Explanation
System Time	Set current device time in the format [Hour:Minute:Second]
System Date	Set current device date in the format [Month/Day/Year]

Key functions for setting the numeric time and date values

Button	Function
<Enter>	Switch between the setting options within a firmware setting, for example, from hour to minute.
[+] [-]	Increase or decrease desired value.
[0] - [9]	Enter desired value.

7.2.2 "Advance" tab

7.2.2.1 Power & Performance

You can have power management control options here.

Calling "CPU - Power Management Control"

Select: "Setup Utility (Page 71)" > "Advanced" > "Power & Performance" > "CPU - Power Management Control".

Firmware setting	Value	Setting in delivery state	Meaning
Boot performance mode	Max Battery		Select the performance state that the BIOS will set starting from reset vector.
	Max Non-Turbo Performance		
	Turbo Performance	x	
Intel(R) Speed-Step(tm)	Disabled	—	Allow more than two frequency ranges to be supported.
	Enabled	x	
Intel(R) Speed Shift Technology	Disabled		Enabling Intel(R) Speed Shift Technology will expose the CPPC v2 interface to allow hardware-controlled P-state.
	Enabled	x	
Turbo Mode	Disabled	x	This configuration is unavailable if Intel(R) SpeedStep(tm) is disabled.
	Enabled		
C state	Disabled	—	Enabling it to allow CPU to go to C state when it's not fully utilized.
	Enabled	x	

7.2.2.2 System Agent (SA) Configuration

You can configure System Agent parameters here.

Calling "System Agent (SA) Configuration"

Select: "Setup Utility (Page 71)" > "Advanced" > "System Agent (SA) Configuration".

Firmware setting	Value	Setting in delivery state	Meaning
VT-d	Supported		Intel® VT-d (Virtualization Technology for Directed I/O) can help you improve security and reliability of the system and improve performance of I/O devices in virtualized environment.
VT-d	Disabled		
	Enabled	x	

7.2.2.3 PCH-IO Configuration

You can configure USB settings here.

Calling "PCH-IO Configuration"

Select: "Setup Utility (Page 71)" > "Advanced" > "PCH-IO Configuration".

Firmware setting	Value	Setting in delivery state	Meaning
USB Port Disable Override	Disable	x	Enable or disable the corresponding USB port to report a Device Connection to the controller.
	Select Per-Pin		
TYPE A USB 3.0	Disabled		Options are only available if you select "Select Per-Pin" in USB Disable Override. Enable or disable USB port. Once the port is disabled, any USB devices plugging into the port will not be detected by BIOS or OS.
	Enabled		
TYPE USB 3.0 AND SD CARD	Disabled		
	Enabled		
TYPE C USB 2.0	Disabled		
	Enabled		
TYPE A USB 2.0	Disabled		
	Enabled		

7.2.2.4 PCH-FW Configuration

You can configure Management Engine Technology parameters here.

Calling "PCH-FW Configuration"

Select: "Setup Utility (Page 71)" > "Advanced" > "PCH-FW Configuration".

7.2 Configure firmware

Firmware setting	Value	Setting in delivery state	Meaning
ME Firmware Version			Current ME (Management Engine) firmware version
ME Firmware Mode	Normal Mode		
ME Firmware SKU	Consumer SKU		
ME Firmware State 1			
ME Firmware State 2			
ME State	Disabled		If ME is disabled, it will be put into ME Temporarily Disabled Mode.
	Enabled	x	

7.2.3 "Security" tab

Calling "Security" tab

Select: "Setup Utility (Page 71)" > "Security".

Firmware setting	Value	Setting in delivery state	Meaning
Current TPM Device ¹			Show the version of current TPM (Trusted Platform Module) device
TPM State			
TPM Active PCR Hash Algorithm			
TPM Hardware Supported Hash Algorithm			
BIOS Supported Hash Algorithm			
TrEE Protocol Version	1.0		TrEE Protocol version 1.0 or 1.1.
	1.1	x	
TPM Availability ¹	Available	x	The TPM (Trusted Platform Module) is Available or Hidden in the operating system. Note: When it is set to Hidden mode, do not expose TPM to 0.
	Hidden		
Clear TPM			Choose to remove all TPM context associated with a specific owner.
Supervisor Password	Installed		It displays "Installed" here if Supervisor Password is set.
	Not Installed	x	
User Password	Installed		You can set User Password after the Supervisor Password is set. It displays "Installed" here if User Password is set.
	Not Installed	x	

Firmware setting	Value	Setting in delivery state	Meaning
Set Supervisor Password			Install or change the password. The length of the password must be greater than 1 character.
Set User Password			Install or change the password. It's available for configuration only after Supervisor Password is configured. The length of the Password must be greater than 1 character.
TLS Certificate Manager			Maintain certificate files for TLS processing. You can choose to import or delete Certificate.

¹: Only visible with device configuration with Trusted Platform Module (TPM).

7.2.4 "Boot" tab

Boot behavior of the device, bootable device components (boot media) and boot order.

Calling "Boot" tab

Select: "Setup Utility (Page 71)" > "Boot".

Firmware setting	Value	Setting in delivery state	Meaning
Quick Boot	Enabled	x	Feature in BIOS that reduces computer boot time.
	Disabled		
Quiet Boot	Enabled	x	Feature in BIOS that makes computer start up faster and without usual error messages on BIOS display.
	Disabled		
Network Stack	Enabled	x	Enable or disable the Network as a boot device.
	Disabled		
PXE Boot capability ¹	Disabled		Enable Pre-Boot Execution Environment.
	UEFI: IPv4		
	HTTP: IPv4		
	HTTP and PXE: IPv4		
	UEFI: IPv6		
	HTTP: IPv6		
	HTTP and PXE: IPv6		
	UEFI: IPv4/IPv6		
	HTTP: IPv4/IPv6		
	HTTP and PXE: IPv4/IPv6	x	
Timeout	0 - 10	2	Delay time in seconds during booting so that the user has time to press the hot-key to open the firmware selection menu.

7.2 Configure firmware

Firmware setting	Value	Setting in delivery state	Meaning
Automatic Failover	Enabled	x	If it fails to boot the default device, it will try to boot next device.
	Disabled		If it fails to boot the default device, a warning messages will appear and then it will go into firmware UI.
Boot Type Order			Use F5 or F6 key on the connected keyboard to change boot type order.
HTTP Boot Configuration			Configure boot parameter by MAC Address via IPv4 or IPv6 protocol

¹: This option shows only when "Network Stack" = Enabled.

Calling "Boot Type Order"

Select: "Setup Utility (Page 71)" > "Boot" > "Boot Type Order".

Firmware setting	Value	Setting in delivery state	Meaning
Hard Disk Drive	Windows Boot Manager	x	Change Hard Disk Driver boot order.
USB			
BEV	EFI HTTP[IPv6]	x	Change BEV boot order.
	EFI HTTP[IPv4]	x	
	EFI PXE 0 for IPv6	x	
	EFI PXE 0 for IPv4	x	
Others			

Calling "HTTP Boot Configuration"

Select: "Setup Utility (Page 71)" > "Boot" > "HTTP Boot Configuration" > "XXX (Mac address of the device)".

Firmware setting	Value	Setting in delivery state	Meaning
Internet Protocol	IPv4	x	Select the version of Internet Protocol.
	IPv6		
Boot URI			A new boot option will be created according to this Boot URL.
Create boot option			

7.2.5 "Exit" tab

Exit the Setup utility. You have the following options for saving or discarding the changes you made:

Calling "Exit"

Choose: "Setup Utility (Page 71)" > "Exit".

Firmware setting	Meaning
Exit Saving Changes	All changes are saved. The device is restarted with the changed firmware settings.
Save Change Without Exit	All changes are saved. Setup utility remains open.
Exit Discarding Changes	Setup Utility is closed. All changes are discarded.
Load Optimal Defaults	The firmware settings are reset to the safe default values. The delivery state is restored. NOTICE: All current firmware settings are overwritten.
Load Custom Defaults	The user-specific profile with the user-specific firmware settings is loaded. Requirement: The firmware settings were previously saved as user-specific profile with "Save Custom Defaults". NOTICE: All current firmware settings are overwritten when loading the user-specific profile with "Load Custom Defaults".
Save Custom Defaults	The current firmware settings are saved as a user-specific profile (see also "Load Custom Defaults").
Discard Changes	All changes to the firmware settings are discarded.

7.3 Update firmware

7.3.1 Update firmware overview

NOTICE
Risk of irretrievable loss of data After a firmware/BIOS update all firmware settings are deleted. This can put the system in an undefined state. The consequence might be damage to the device or system. Before updating your firmware, back up the current firmware settings by writing them to a file. You can find information on this under ""Exit" tab (Page 77)".

7.3 Update firmware

Requirements

- The device to be updated
- Prepared USB drive.
- USB keyboard
- USB hub powered with an external AC adapter

Note

If the USB hub is not powered with an external AC adapter, the BIOS and EC firmware update run the risk of update corruption.

Preparing USB drive

Take the following steps to prepare the USB drive which will be used for BIOS and EC firmware update:

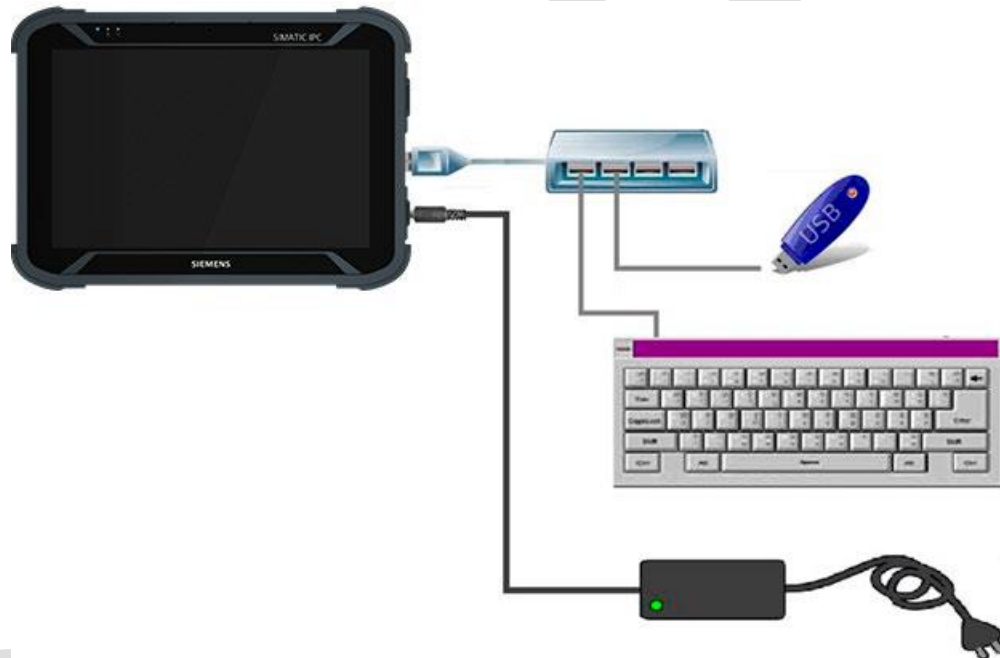
1. Format the USB drive into FAT32.
2. Please contact your local SIEMENS representative to get information about new BIOS versions.
3. Unzip the file into a folder named as "BIOS_Update".
4. Store the unzipped files in the root directory of the USB drive.

7.3.2 BIOS and EC firmware update (Windows mode)

Procedure

Take the following steps to perform BIOS and EC firmware update under Windows mode:

1. Connect the device with AC adapter, USB hub, the prepared update USB drive and USB keyboard.



2. Copy the unzipped BIOS update files from the USB drive to the target SSD of the device.
3. Long press the "Update.exe" file and select "Run as administrator".
4. Press the power button to power on the device manually after it finishes BIOS first phase update and gets shut down automatically. You will be reminded by the displaying system message.

Note

Make sure the AC adapter is well connected during BIOS flash period, and do not shut down the device. Otherwise, the device might suffer from permanent damage and it might require substantial hardware repair.

After the device is powered on manually, BIOS update starts automatically.

5. After BIOS update finishes, you can check BIOS version information either in System Information or by pressing HotTab.

Technical data

8.1 General technical specifications

Device function	Data	Value
Display	Size	10.1 inch
	Resolution	1920 × 1200
	Brightness	800 nits
	Contrast ratio	800:1 (typ.)
	Viewing angle	85/85/85/85
	Touch	Projected capacitive multi-touch
	Bonding structure	Multi-layer bonding structure for readability in sunlight
	Readability	Anti-glare coating
System specification	Processor	Intel Core i5-1135G7 / 2.4 GHz (Turbo Boost up to 4.2 GHz, optional)
	Main memory	32 GB DDR4 SDRAM
	Mass storage	512 GB SSD, additional memory capacity on microSD card
	Operating system	Windows 10 IoT Enterprise (64-bit)
	WLAN	802.11 a/b/g/n/ac/ax
Readers	Barcode Reader	1D /2D Barcode Imager
	RFID in EOL compartment	SIDIS Pro-Tags (according to ISO 15693)
Camera	Front camera	Front camera (2 MP)
Mechanical system	Dimensions	266 × 187 × 20.4 mm
	Weight	1.1 kg
	Cooling system	Fan
I/O connections	USB connection	1 × USB 3.0 (Type A) 1 × USB 3.0 (Type C)
	Video	1 × Micro HDMI
	Audio	1 × Audio combo jack 3.5 mm (Mic in or Line out) Integrated dual-mic microphone Single speaker
	SD card tray	1 × microSD tray
	Status display	2 × LED display for electricity supply network and battery
	Docking connector	1 × 19-pin docking conn
	Expansion port	1 × expansion port for USB 3.0 / UART / LAN (used by EOL compartment)

Device function	Data	Value
Environment	Relative air humidity during operation	10% to 90%, no condensation
	Operating temperature	0 °C to 40 °C
	Storage temperature	-30 °C to 70 °C
	Usage	Indoor
	Altitude	< 3000 m above sea level
Safety function	Environment pollution	Pollution degree 2
	Trusted Platform Module (TPM) 2.0	Supported
Operator controls	Kensington lock	Supported
	Buttons	1 × On/Off button
Power supply	Battery	11.4 V (typ. 3500 mAh), designed as a lithium-ion battery (3S1P)
	Battery life	Standard battery: 6 hours
	Nominal voltage	19 V DC
	Power supply unit	100–240 V, 50–60 Hz / 19 V DC
	Power supply via OBD-Connector	0 to 32 V DC, wide range for cars and trucks
Certification	Certification	CE, ANATEL

8.2 Technical specifications for accessories

Device function	Data	Value
Accessories	Standard	Power supply unit and power supply cord

8.3 Ambient conditions

Climatic ambient conditions	
Temperature	
Operation	+0 °C to +40 °C Gradient: ≤ 10 K/h; no condensation
Storage/transport	−20 °C up to +60 °C Gradient: ≤ 20 K/h; no condensation
Relative humidity (recommended)	
Operation	5% up to 85% at 30 °C; no condensation Gradient: ≤ 10 K/h; no condensation
Storage/transport	5% up to 95% at 25 °C to 55 °C; no condensation Gradient: ≤ 20 K/h; no condensation

8.5 Dimension drawing

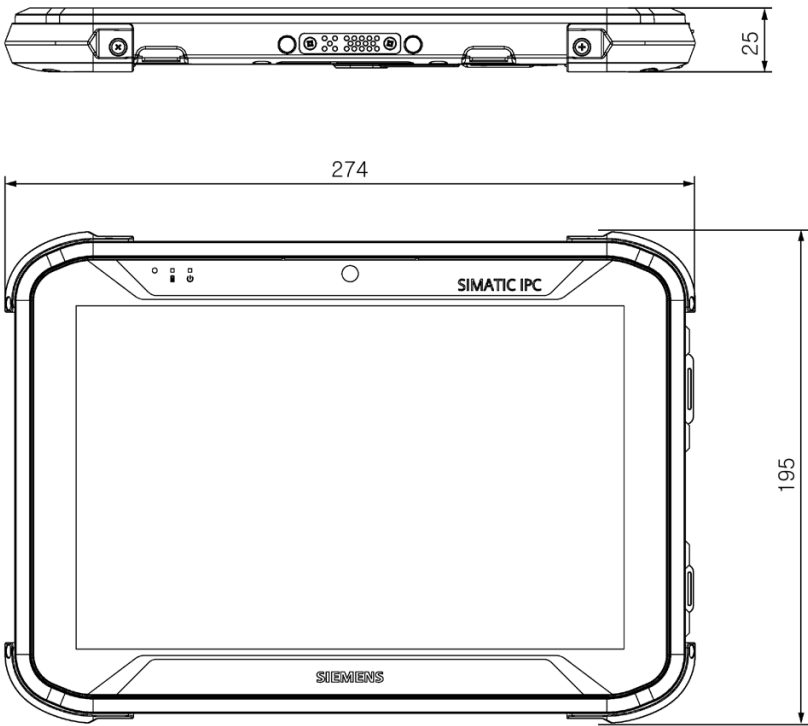


Figure 8-1 All dimensions in mm

Standards and approvals

9.1 Overview

Note

Applicability

The following shows the approvals that may be available. For the device itself, it is certificated as shown on the product label and package label.

9.2 Certificates and approvals

Note

Applicability

The following shows the approvals that may be available. For the device itself, it is certificated as shown on the product label and package label.

Software license agreements

If the device is supplied with preinstalled software, you must observe the corresponding license agreements.



The product meets the requirements and safety objectives of the following EC directives and it complies with the harmonized European standards (EN) for Tablet PC which are published in the official documentation of the European Union.

- **2014/53/EU (Radio equipment directive)**

Directive of the European Parliament and of the Council of April 16, 2014 on the harmonization of the laws of the member states relating to placing radio equipment on the market and to cancel the directive 1999/5/EU

- **2011/65/EU (RoHS directive)**

Directive of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment

- **(EU) No 617/2013(ERP Directive)**

COMMISSION REGULATION implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for computers and computer servers

FCC

USA	
Federal Communications Communications Radio Frequency Interference Statement	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 when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
Shielded cables	Shielded cables must be used with this equipment to maintain compliance with FCC regulations.
Modifications	Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.
Conditions of operations	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.

WEEE label (European Union)



Disposal instructions, observe the local regulations and the section "AUTOHOTSPOT".

9.3 ESD guideline

What does ESD mean?

An electronic module is equipped with highly integrated components. Due to their design, electronic components are highly sensitive to overvoltage and thus to the discharge of static electricity. Such electronic components or modules are labeled as electrostatic sensitive devices.

The following abbreviations are commonly used for electrostatic sensitive devices:

- ESD – Electrostatic sensitive device
- ESD – Electrostatic Sensitive Device as a common international designation

Electrostatic sensitive devices can be labeled with an appropriate symbol.



NOTICE

Damage to ESD from touch

Electrostatic sensitive devices, ESD, can be destroyed by voltages which are far below the human perception limit. If you touch a component or electrical connections of a module without discharging any electrostatic energy, these voltages may arise.

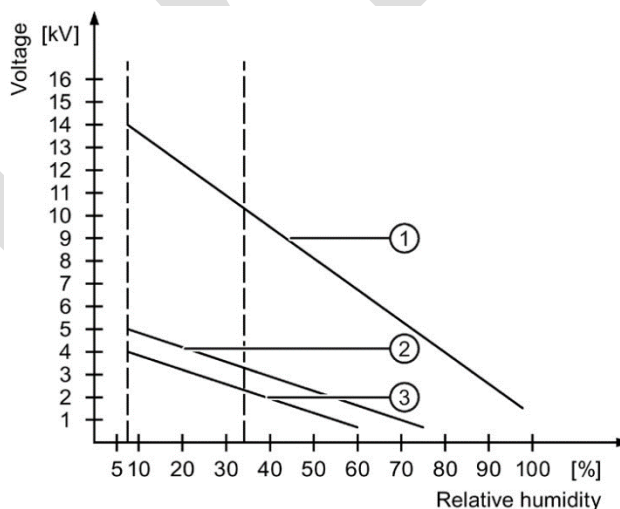
The damage to a module by an overvoltage can often not be immediately detected and only becomes evident after an extended period of operation. The consequences are incalculable and range from unforeseeable malfunctions to a total failure of the machine or system.

Avoid touching components directly. Make sure that persons, the workstation and the packaging are properly grounded.

Charge

Every person without a conductive connection to the electrical potential of his/her surroundings can be electrostatically charged.

The material with which an electrostatically-charged person comes into contact is of particular significance. The figure shows the maximum electrostatic voltages with which a person is charged, depending on humidity and material. These values conform to the specifications of IEC 61000-4-2.



- ① Synthetic materials
- ② Wool

- ③ Antistatic materials such as wood or concrete

NOTICE

Grounding measures

There is no equipotential bonding without grounding. An electrostatic charge is not discharged and may damage the ESD.

Protect yourself against discharge of static electricity. When working with electrostatic sensitive devices, make sure that the person and the workplace are properly grounded.

Protective measures against discharge of static electricity

- Disconnect the power supply before you install or remove modules which are sensitive to ESD.
- Pay attention to good grounding:
When handling electrostatic sensitive devices, make sure that persons, the workstation and devices, tools and packaging used are properly grounded. This way you avoid static discharge.
- Avoid direct contact:
 - As a general rule, do not touch electrostatic sensitive devices, except in the case of unavoidable maintenance work.
 - Hold the modules at their edge so that you do not touch the connector pins or conductor paths. This way, the discharge energy does not reach and damage the sensitive components.
 - Discharge your body electrostatically by touching grounded metallic parts before you take a measurement at a module. Always use grounded measuring instruments.

Hardware description

A.1 System resources

Currently allocated system resources

All system resources (hardware addresses, memory configuration, allocation of interrupts, DMA channels) are assigned dynamically by the Windows OS, depending on the hardware configuration, drivers and connected external devices.

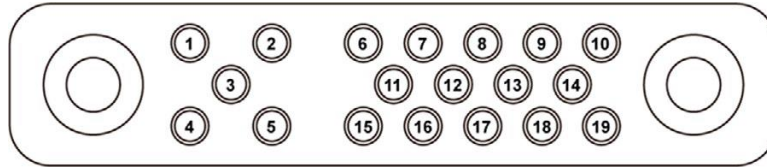
You can in each case view information on the current configuration of system resources or any existing conflicts with the installed operating system as follows:

- Windows icon in the status bar: Start > Enter "msinfo32" in the search box.

A.2 Interface

A.2.1 Terminal assignment of the docking connector

The bottom of the tablet has a 19-pin docking connector with the following terminal assignments:



Pin No.	Description
1	RF_GND
2	DOCK_DET#
3	GPS ANT
4	RF_GND
5	RF_GND
6	NC
7	NC
8	DETECT+
9	Voltage
10	Voltage

Pin No.	Description
11	NC
12	NC
13	GND
14	Voltage
15	USB+
16	USB-
17	GND
18	GND
19	DETECT-

A.2.2 Defining COM ports

The tablet uses the "HotTab" management app to control the integrated functions. The numbers of all COM ports have been predefined in the delivered operating system image:

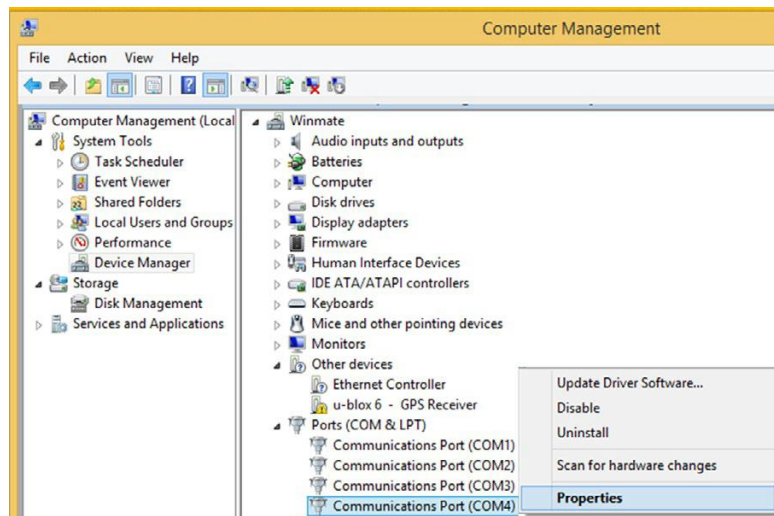
COM port	Device
COM 1	IRPLI2 or SRIF device
COM 3	1D / 2D Imager
COM 11	RS-232 for docking (optional)
COM 12	RFID

For some special applications, you may have to reinstall the operating system. This causes the settings of the COM ports to be lost. To ensure that the functions work correctly with the HotTab service program, set up the COM port numbers again.

Procedure

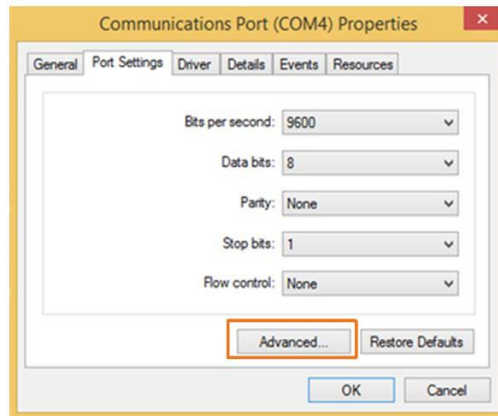
To redefine the COM port numbers, proceed as follows:

1. Open the Device Manager in the control panel.
2. Find the COM port to be changed and select "Properties" in the shortcut menu.

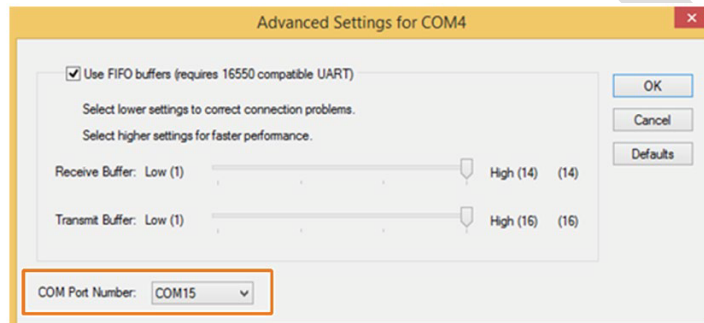


The "Communication Port" settings page opens.

3. On the "Port Settings" tab, press the "Advanced" button.



4. In the "COM Port Number" list, select the correct number for the COM port from the above table and close each of the dialogs with "OK".



5. Repeat steps 2–4 for all COM ports in the table.
6. In the Device Manager from step 1, check whether the port number has been successfully redefined.
7. Restart the tablet.

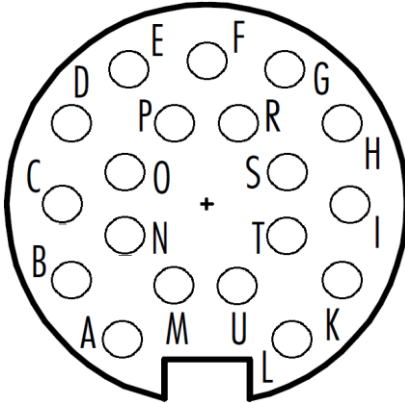
A.2.3 OBD cable outlet

The OBD connector is the main connection to the vehicle. Therefore, it is the separating device and has to be disconnected in any failure mode. Disconnect the OBD connection from the device to disconnect it from the power supply. The disconnecting device must be easily accessible to the user.

A.2.3.1

OBD cable outlet 19-pin circular connector with Matrix[1]

- Vehicle communication interface = iMDA7 / iMDA-FD
- Matrix module = Matrix[1]
- OBD socket = flange with 19-pin round connector



View from above of pins
on the diagnostics unit of the MPS-T

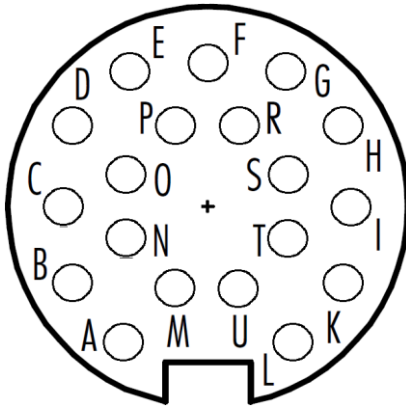
Pin no.	Signal		Assignment OBD ¹⁾
	Non DoIP	DoIP	
A	K1		7
B	DoIP:TX- car		13
C	KL15		1
D	K2		15
E	DoIP:TX+car		12
F	CAN1H		6
G	CAN1L		14
H	CAN2H	DoIP:RX+car	3
I	CAN2L	DoIP:RX- car	11
K	L1		-
L	CAN3H LowSpeed ²⁾		-
M	CAN3L LowSpeed ²⁾		-
N	KL31 (-)		4, 5
O	KL31 (-)		4, 5
P	KL31 (-)		4, 5
R	KL30 (+)		16
S	KL30 (+)		16
T	KL30 (+)		16
U	Ethernet ActivationLine		8

¹⁾ The OBD connector pin assignment is the result of using the OBD cable = 6AL2027-5P... (DO-K0930-1P...) or similar

²⁾ Only when using vehicle communication interface iMDA7

A.2.3.2 OBD cable outlet 19-pin circular connector with Matrix[2]

- Vehicle communication interface = iMDA7 / iMDA-FD
- Matrix module = Matrix[2]
- OBD socket = flange with 19-pin round connector



View from above of pins
on the diagnostics unit of the MPS-T

Pin no.	Signal		Assignment OBD ¹⁾
	Non DoIP	DoIP	
A	K1		7
B	CAN2H	DoIP:TX- car	13
C	KL15		1
D	K2		15
E	CAN2L	DoIP:TX+car	12
F	CAN1H		6
G	CAN1L		14
H	-----	DoIP:RX+car	3
I	-----	DoIP:RX- car	11
K	L1		-
L	CAN3H LowSpeed ²⁾		-
M	CAN3L LowSpeed ²⁾		-
N	KL31 (-)		4, 5
O	KL31 (-)		4, 5
P	KL31 (-)		4, 5
R	KL30 (+)		16
S	KL30 (+)		16
T	KL30 (+)		16
U	Ethernet ActivationLine		8

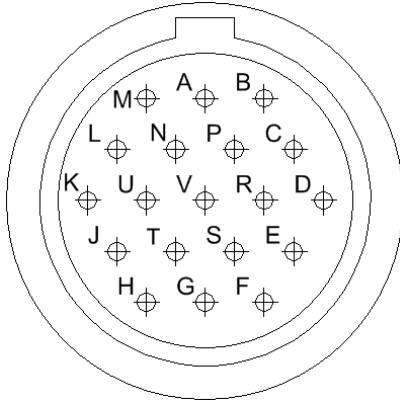
¹⁾ The OBD connector pin assignment is the result of using the OBD cable = 6AL2027-5T... (DO-K0930-1T...) or similar

²⁾ Only when using vehicle communication interface iMDA7

A.2.3.3

OBD cable outlet 19-pin MIL connector with Matrix[1]

- Vehicle communication interface = iMDA7 / iMDA-FD
- Matrix module = Matrix[1]
- OBD socket = flange with 19-pin MIL connector



View from above of pins
on the diagnostics unit of the MPS-T

Pin no.	Signal		Assignment OBD ¹⁾
	Non DoIP	DoIP	
A	K2		15
B	CAN3H LowSpeed ²⁾		-
C	CAN2H	DoIP:RX+car	2
D	KL31 (-)		4,5
E	KL31 (-)		4,5
F	CAN1H		6
G	K1		7
H	KL31 (-)		4,5
J	KL31 (-)		4,5
K	CAN3L LowSpeed ²⁾		-
L	CAN2L	DoIP:RX- car	11
M	KL15		1
N	-	DoIP:TX- car	-
P	CAN1L		14
R	-	DoIP:TX+car	-
S	KL30 (+)		16
T	KL30 (+)		16
U	KL30 (+)		16
V	Ethernet ActivationLine		-
Housing	KL31 (-), Shield		

1)	The OBD connector pin assignment is the result of using the OBD cable = 6AL2027-4X... (DO-K0955-1I...) or similar
2)	Only when using vehicle communication interface iMDA7

Technical Support

For technical support, please contact your local SIEMENS representative or contact the manufacture as stated below.

Siemens AG
Gleiwitzer Straße 555
D-90475 Nürnberg
eMail: ECOS-Hotline.aud@siemens.com

B.1 Basic troubleshooting

Problem	Solution
The replacement battery is not charging.	<ul style="list-style-type: none"> Ensure that the replacement battery has been inserted correctly and the power supply unit has been connected correctly.
No display appears on the screen.	<ul style="list-style-type: none"> The tablet may be in hibernation. Press the On/Off button to wake the display. The brightness may be set too low. Increase the brightness.
The screen suddenly turns black and the status display goes out.	<ul style="list-style-type: none"> Make sure that the LED display has not been turned off in HotTab. Ensure that the power supply unit has been connected correctly. If the device is running on battery power, the battery may be empty. Charge the battery.
The quality of the WLAN signal is poor.	<ul style="list-style-type: none"> The tablet may be outside the WLAN range. Bring the tablet closer to the access point or near another WLAN device that is connected to the tablet. Check whether microwave ovens, cordless phones, or similar devices are causing interference in your vicinity.
cannot establish a connection to another WLAN device.	<p>Move the tablet away from interference-causing devices. I</p> <ul style="list-style-type: none"> Make sure that the WLAN function is switched on. Make sure that the SSID setting is the same for every WLAN device in the network. Restart the tablet. Make sure that the IP address and subnet mask have been set correctly.
I cannot establish a connection to another device via Bluetooth.	<ul style="list-style-type: none"> Ensure that Bluetooth is turned on for both devices (on the tablet, check with HotTab to see if Bluetooth is switched on). Ensure that the distance between the two devices is no more than 10 meters and there are no walls or larger barriers between the devices. Make sure that both devices have been switched on and configured to allow them to detect each other.⁹⁶ Make sure that both devices are compatible.

Problem	Solution
The GPS application cannot find my location.	<ul style="list-style-type: none"> • Make sure that GPS is switched on in HotTab. • Make sure that the GPS receiver and location sensor have been enabled in the control panel. • The tablet may be outside the reception range. Move the tablet into the open or closer to a window. • Check whether microwave ovens, cordless phones, or similar devices are causing interference in your vicinity. Move the tablet away from interference-causing devices.
No sound is generated.	<ul style="list-style-type: none"> • Adjust the volume on the tablet by pressing the volume rocker. • When using an external audio device, make sure that the cable has been connected correctly.
I cannot project the tablet display onto another screen.	<ul style="list-style-type: none"> • Make sure that the VGA driver is installed. • Make sure that the selected output setting is correct.
The barcode reader is not emitting a laser beam and doesn't appear to be working.	<ul style="list-style-type: none"> • Make sure that the barcode reader has been switched on in the HotTab service program.
The barcode reader is emitting a laser beam but does not read the barcode presented to it.	<ul style="list-style-type: none"> • Change the distance between the barcode reader of the device and the barcode to be scanned. • Make sure that the barcode type has been enabled on the tablet. To learn how to enable or disable a specific barcode type, read the "Configuration of the barcode reader" section.
I have a problem with the GPS accuracy.	<ul style="list-style-type: none"> • When the GPS function is used, we recommend disabling the barcode reader in HotTab to reduce interference.
Battery is leaking or swollen	<ul style="list-style-type: none"> • The lithium battery used in this tablet can swell after many charges/discharges, but this does not pose a safety problem. • Continued use in this state may lead to the battery becoming jammed. For this reason, you should no longer use the battery and purchase a new one.
No display in BIOS with Micro-HDMI when using external monitor	Hook up display cable before power on the machine, and then press F2 right after power on SIDIS MPS-T2.
No display when Linux booting	Hook up display cable after OS loaded
The system is unexceptional hang issue	<ol style="list-style-type: none"> 1. Click reset button to reset CPU registers. The system shuts down, power up the system, a message shows "CMOS Battery is missed!" 2. Perform either of the following steps <ul style="list-style-type: none"> – Press F1 to enter the recovery mode. – Press F2 to go to the BIOS Front Page. After pressing "Continue" in BIOS Front Page, you can go to current operating system. – If an external keyboard is connected, press any key to enter OS.

B.2 General problems

This chapter provides you with tips on how to locate and troubleshoot common problems.

Problem	Possible cause	To correct or avoid error
The device is not operational.	There is no power supply to the device.	Check the power supply, the power cord or the power plug.
	Device is switched off	Press the power button
	The battery is empty or not installed	Charge or install battery.
Wrong time and/or date on the device.		1. Press <ESC> during the boot sequence to open BIOS-Setup. 2. Set the time and date in the setup menu.
Although the BIOS setting is OK, the time and data are still wrong.	The backup battery is dead.	In this case, please contact your technical support team.
USB device not responding	The operating system does not support the USB ports.	Enable USB Legacy Support for the mouse and keyboard. For all other devices you will need USB drivers for the specific operating system.
A beep sounds when a key is pressed but no character is displayed	Keyboard buffer is full	<CTRL> <PAUSE>
An ISO image mounted with Intel® AMT does not boot	Bootting from USB is disabled in the BIOS	Enable bootting from USB in the BIOS Setup, see section "AUTOHOTSPOT", "Boot" section.

B.3 Alarm, error, and system messages

During startup (the boot process), the BIOS first performs a **Power On Self Test (POST)** and checks whether certain functional units of the PC are operating error-free. The boot sequence is immediately interrupted if critical errors occur.

BIOS initializes and tests further functional units if the POST does not return any errors. In this startup phase, the graphics controller is initialized and any error messages are output to the screen.

The error messages output by system BIOS are listed below. For information on error messages output by the operating system or application programs, refer to the corresponding manuals.

On-screen error messages

On-screen error message	Meaning / tip
Operating system not found	Possible causes: <ul style="list-style-type: none"> No operating system installed Incorrect active boot partition Wrong boot drive settings in SETUP
Keyboard controller error	Controller error. Contact your technical support team
SMART failure detected on HDD	Hard disk reports pending failure through S.M.A.R.T.

On-screen error message	Meaning / tip
CMOS battery failed	CMOS battery is not connected.
CMOS battery weak	CMOS battery is weak
Real-time clock has lost power	The CMOS clock was operated without battery or with a battery that was too weak, during battery change, for example. Check the CMOS clock.
Keyboard error	Function keys are defective
PLD configuration failed	Programming of the PLC on the motherboard has failed.

B.4 Problems with WLAN

The following lists the possible causes for problems with Wireless LAN.

Problem	
Cannot connect with WLAN	<ul style="list-style-type: none"> • Check that you have enabled the WLAN. • Check that the other WLAN partner is active. • Check the WLAN connection settings Observe the corresponding notes on WLAN configuration and operation in the Online Help of the WLAN adapter.
Data transmission speed is too low	<ul style="list-style-type: none"> • Please note that the data rate stipulated and visible under Windows is only a theoretical value / corresponds to the gross value. Determined by the transmission procedure, the actual applicable data rate for the data transmission is usually around 50% of the gross value. • The maximum data transmission speed depends on many factors. Start by verifying that the transmission mode of all network components is set up in accordance with the IEEE 802.11 a/b/g/n/ac/ax or ac standard. The spatial arrangement of the network components can also negatively influence the transmission. <ul style="list-style-type: none"> – The distances between the components should be as short as possible. – Masonry or reinforced concrete walls have a negative effect on the transmission performance and can, under some circumstances, prevent a connection from being established. For the best performance, a line-of-sight connection of the network components is preferred. – A high load on the network, perhaps from too many simultaneous access attempts from different nodes, can lead to lower data rates or communication problems.

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