Advantech-DLoG

/ DLT-V72 Series

ADVANTECH DLOG

Digital Logistics & Fleet Management

Manual

DLT-V72 Series Industrial PC

Manual V2.00

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1. Information about the DLT-V72 manuals

1.1. Available manuals – in printed form and on the Internet

	Contents	For target group	Availability
Safety instructions	For protecting personnel and property	Skilled personnel	Printed, enclosed with the device
Quick start guide	First steps in installation and mounting	Skilled personnel	
Mounting instructions for accessories	Description of mounting steps	Skilled personnel	Printed, enclosed with the respective accessories
User Manual	Complete operating instructions	Skilled personnel and trained users	PDF files at www.advantech-dlog.com *Download -> Products*
DLoG Config manual, ADLoG Linux manual etc.	Description of software for the DLT-V72	Skilled personnel	

- ⇨ Pay attention to these manuals because they help avoid hazards, reduce repair costs and downtimes, and increase the reliability and service life of the DLT-V72.
- ⇨ Keep the manuals for future use.
- ⇨ Please contact DLoG GmbH if you require additional information or clarification. You can find the contact address in section *Technical customer support*.

Current manual versions at our website

The latest versions of our manuals are available at our website:
www.advantech-dlog.com -> *Download -> Products*

Observe safety notices

Observe the "DLT-V72 Safety Instructions" included with the device.

1.2. ONE manual for all device models

This manual applies to all models of the DLT-V72 series. Differences with regard to operation, functionality, etc. are clearly indicated in the manual.

- DLT-V7210 with 10" display
- DLT-V7210K with integrated keyboard
- DLT-V7212 with 12" display
- Device model with resistive touchscreen
- Device model with projected-capacitive touchscreen (PCT)
- And more

1.3. Design elements in the manual

The following design elements are used in this manual:

DANGER / WARNING / CAUTION

DANGER means that death or severe bodily injury will occur if this information is not observed.

WARNING means that death or severe bodily injury can occur if this information is not observed.

CAUTION means that slight bodily injury can occur if this information is not observed.

NOTICE: Physical damage

Information about possible physical damage

TIP / HINT

Tips, hints for using the product

Note about additional information in manuals

2. Functional description

2.1. Intended use

Fig. 2.1: DLT-V72 device examples with optional mounting bracket

The DLT-V72 industrial PCs are data communication terminals for use in commercial environments (e.g. logistics, warehousing, manufacturing). Any other or additional use beyond this shall be deemed an improper use. The user/operator of the DLT-V72 is solely responsible for any resulting damage. This also applies to any unauthorized modifications made to the device.

Intended use includes the compliance with the environmental conditions permitted for the device (e.g. ambient temperature -30 °C to +50 °C) and specifications (e.g. DC power supply unit 12/24/48 VDC) as well as compliance with all safety Instructions.

The DLT-V72 industrial PCs:

- are not approved for use in EX zones (potential explosion hazard).
- are not approved for use on ships.
- are not approved for use on rail vehicles
- are not approved for use in life-support systems or critical safety systems where system malfunction can lead to the direct or indirect endangerment of human life.

Only use accessories that have been tested and approved by Advantech-DLoG for the respective DLT-V72. Otherwise, any DLoG GmbH warranty for this device will be void.

2.1.1. Requirements for safe operation

The requirements are:

- Proper transport and storage.
- Proper setup and use.
- Proper maintenance and service.
- Operation by trained personnel.

2.1.2. Permitted environmental conditions

DLT-V72 industrial PCs may only be used under specified environmental conditions.
See section *11.2 Environmental conditions*.

2.2. Mount, operate and service the device correctly

DLT-V72 industrial PCs were designed and built according to modern technology and accepted safety regulations. However, the operation of the DLT-V72 can endanger personnel or third parties and cause damage to the device and other material assets when, for example, the device is

- installed incorrectly or configured improperly.
- operated by untrained or uninstructed personnel.
- improperly operated and maintained.
- not used as intended.

The owner/operator commitments with regards to safety (accident prevention regulations, occupational safety) are to be followed.

2.3. Warranty conditions

For DLT-V72 industrial PCs, batteries and accessories the Advantech-DLoG TOB regulations are valid (section *Liability for defects -> limitation period for claims*).
Find details on the Advantech-DLoG Internet homepage www.advantech-dlog.com.

LCD display

The LCD display of the DLT-V72 series fulfills the highest quality standards and was inspected for pixel defects. However, due to technological reasons pixel defects can occur.
This is not a malfunction; it is a part of the technical specifications.

2.4. Device identification/name plate

The name plate is located on the rear side of the DLT-V72. It must remain legible at all times for purposes of identifying the device.

⇨ Do not damage the name plate or remove it from the device.

Information about the name plate:

Information		Explanation
DLoG GmbH		Manufacturer contact information
Model	DLT-V7210 DLT-V7212	Device name; the last two characters of the name indicate the display size 10.4", 12.1".
Front		D: Screen defroster R: Resistive touchscreen P: PCT K: Integrated keyboard
	9-digit ID	Identification code (characters from left to right)
Input	V / A	Input voltage of DC power supply unit nominal current
S/N		Serial number: Specific Advantech-DLoG device code
Mfd		Week and year of manufacture
Barcode		For Advantech-DLoG internal purposes

Digit (left to right)	Component (encryption type)	Key
1	Display resolution (1-9)	1:SVGA 2: XGA 3:WVGA 4: WXGA
2	CPU (1-9)	1: ATOM D525 2: Celeron 2980U 3: i5 -4300U 4: ATOM 1.1 GHz 5: AMD DC 1.0 GHz 6: PXA 320 7: ATOM E3845 8: ATOM E3827 9: ATOM Z510
3	PSU (1-9)	1: 12-48VDC 2: 12-48VDC with UPS 3: AC PSU 4: 24/48 VDC 5: 12/24 VDC
4	WLAN module (A-Z)	A: Summit PE15N B: Sparklan WPEA-252NI C: SDC-MSD40NBT
5	WWAN module (1-9)	1: Sierra wireless 8090 2: Sierra wireless 8092 3: Cinterion PH8
6	X	Reserved
7	X	Reserved
8	X	Reserved
9	Antennas (opportune)	L: Low Profile R: Remote I: High Profile K: Combo (WiFi, WWAN, GPS) B: Build-in

Comment: X stands for not present / not applicable respectively as placeholder for add-ons.

3. Operation

3.1. Switching the DLT-V72 on/off

The following factors determine how the DLT-V72 can be switched on and off:

- Is the DLT-V72 mounted on a vehicle and connected with the ignition signal?
- What are the automatic shutdown settings that were defined in the DLoG Config configuration program?

Switch on

Switch the DLT-V72 on as follows, depending on the configuration:

⇨ Press the <Power> button.

⇨ Or: By applying the supply voltage.

⇨ Or: Through the ignition signal of the vehicle (depends on automatic shutdown settings).

Fig. 3.1: <Power> button of the DLT-V72

Switch off

Switch the DLT-V72 off as follows, depending on the configuration:

- ⇨ Press the <Power> button of the activated DLT-V72.
- ⇨ Or: Disconnect the supply voltage.
  NOTICE:
  Devices without integrated UPS will be hard-terminated (data loss possible).
  Devices with integrated UPS will switch automatically to UPS/battery power supply when the supply voltage is broken.
- ⇨ Or: Deactivate the ignition of the connected vehicle (depends on automatic shutdown settings).

WARNING

Electric shock due to incomplete switching off of the DLT-V72 with integrated UPS.

Because of the lithium-ion battery pack, the integrated UPS may still carry current even if the DLT-V72 itself is switched off.

Reason: If the DLT-V72 has been configured to also start without <Power> button and ignition in the "DLoG Config" program, this setting will need to be changed first. Otherwise, the DLT-V72 will restart after a short pause as long as there is available battery capacity.

- ⇨ Shut down the DLT-V72 via the operating system function.
- ⇨ Disconnect from the power supply.
- ⇨ Open the battery cover; unplug the battery pack.

Time between switching off and on: 10 seconds

After the DLT-V72 has been shut down and switched off, it takes 10 seconds until the device will react to a switch-on signal (<Power> button / ignition).

3.2. Operating the touchscreen

Depending on the equipment, the DLT-V72 will have:

- A resistive touchscreen
- or a projected-capacitive touchscreen with glass front (PCT).

NOTICE: Physical damage

Improper operation can cause damage and downtimes to the DLT-V72 and to the connected complete system.

Operators of the DLT-V72 must be trained in the handling of the device.

Operating the touchscreen

All touchscreens can be operated with:

- Clean, dry fingers.
- Clean, dry, soft gloves.

Resistive touchscreens with:

- Suitable touch stylus (plastic or wood, rounded tip)

PCT touchscreens with:

- Suitable touch stylus with capacitive (electrically conductive) tip.

Prevent damage to the touchscreen

Valid for all touchscreen versions: Resistive and PCT!

⇨ Keep the touchscreen clean.

⇨ Do not touch the touchscreen with pointed, sharp, rough or hard objects, e.g. ball point pens, writing implements, tools of any kind (e.g. screwdrivers).

⇨ Make sure that no adhesives get on the surface of the touchscreen.

⇨ Ensure that the screen surface is not influenced by high voltages or static electricity.

⇨ Do not use excessive force when touching touchscreens, do not hit or press hard.

⇨ If the device with the touchscreen is placed down: Place a clean, soft cloth underneath.

NOTICE: Physical damage

Salt water on the PCT touchscreen can be interpreted as a "touch" and lead to malfunctions.

Multi-touch capability

Depending on the installed operating system type, the PCT touchscreen of the DLT-V72 is multi-touch capable. This means it can detect two touches simultaneously.

3.3. DLT-V7210 and DLT-V7212: Front keys and LEDs

3.3.1. Overview

Fig. 3.2: Operating elements DLT-V7210 and DLT-V7212:

Keys left side:
- Device on/off
- Display brighter
- Display darker
- Backlighting on/off
- Touch or Screen-Defroster on/off

Keys right side:
- Special keys S1 up to S8
- SHIFT-key

3.3.2. Keys and LEDs in detail

Left on DLT-V7210 and DLT-V7212:

Key	Explanation
	<Power> button, switch device on/off
	Manual brightness control: Display brighter
	Manual brightness control: Display darker
	**Switch the backlight on/off** **NOTE**: The DLT-V72 will continue to react to keyboard, mouse and touchscreen inputs even if the backlight is switched off. This means that entries can still be made even when the screen display is not visible.
	**Function 1: Activate/deactivate touchscreen** Touch LED on (orange): Touchscreen inactive Touch LED off: Touchscreen active **Function 2, in combination with the <SHIFT> key: Activate/deactivate screen defroster (optional)** **NOTE**: The temp LED indicates whether the screen defroster is active or inactive, not the touch LED above this key.

LED	Explanation
	**Function 1: Display of excessive or insufficient temperature in the device** Temp LED flashes red **Function 2: Display of screen defroster active or inactive** Temp LED on (red): Screen defroster is active Temp LED off: Screen defroster is inactive
	LED on (green): Indicates access to the flash drive
	LED on (green): Display of available internal supply voltage

Right on the device:

Key	Explanation
	**Special keys <S1> to <S8>** These keys are configured with the "DLoG Config" program; the associated manual is available in the Download Center at www.advantech-dlog.com.
	<SHIFT> key If the LED is illuminated, it indicates that <SHIFT> is activated.

3.4. DLT-V7210K: Front keys, LEDs and integrated keyboard

Fig. 3.3: DLT-V7210K Front keys, LEDs and integrated keyboard

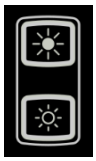
Keys left side:
- Device on/off
- Display brighter
- Display darker
- Backlighting on/off
- Touch on/off
- FN: Switch special keys S1 up to S6 to assignment S2 up to S12

Keys left side:
- Special keys S1 up to S12

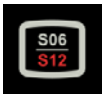
Bottom: Integrated keyboard

3.4.1. Front keys and LEDs

Left on DLT-V7210K:

Key	Function when FN key not activated (FN LED is off)	Function when FN key is activated (FN LED is on)
	**Power** button, switch device on/off	
	Display brightness control: Display brighter / darker	Integrated keyboard brightness control: Background of keyboard brighter / darker
	Background lightning of the display on / off. **NOTE**: The DLT-V7210K will continue to react to keyboard, mouse and touchscreen inputs even if the backlight is switched off.	Background lightning of the integrated keyboard on / off
	Activate/deactivate touchscreen. Touch LED on (orange): Touchscreen inactive Touch LED off: Touchscreen active	No function
	With FN key pressed (LED on): The special keys to the right on the device are shifted to assignment S2 to S12 (permanent, until FN is pressed again). The brightness/illumination keys to the left on the device affect the integrated keyboard, not the display (permanent, until FN is pressed again). The alternative characters of the individual keys shown in red are activated on the integrated keyboard (not permanent).	

Right on DLT-V7210K:

Key	Explanation
 Up to 	Special keys **S1** up to **S12** For customer-specific configuration. Configure with „DLoG Config“, „ADLoG Linux“ or „ADLoG Android“ (depends on OS).

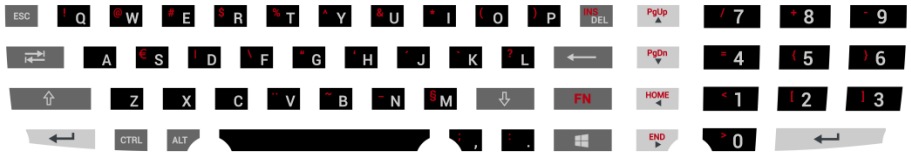
LEDs

LED			
Explanation	LED on: Display of available internal supply voltage	Display of excessive or insufficient temperature in the device; Temp LED flashes red	LED on: Indicates access to the flash drive

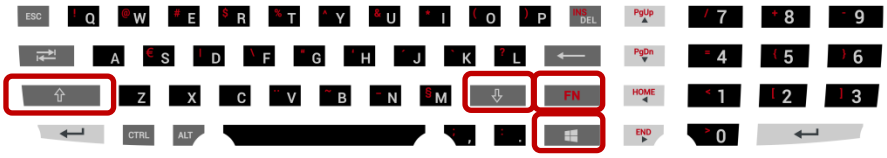
3.4.2. Integrated keyboard

The integrated keyboard of the DLT-V7210K is available in three languages: German, English and French.

Example English version (QWERTY)



Description of specific keys



Key	Function
	<Shift> key
	Caps Lock: permanent switch to uppercase letters
	Activate the **FN** key on the left of the device: See the explanation there.
	Windows key

3.5. Operating states

Status of LEDs		DLT-V72 status
Supply voltage 	Temperature 	
OFF	OFF	Initial state, idle time – waiting for a new ignition signal or for the <Power> key after switch-off; no voltage supply
OFF	FLASHING	Temperature sensor faulty
FLASHING	OFF	DLT-V72 is in standby mode (S3)
OFF	ON	Computer will only start if the temperature **in the device** is in the range between -30 and +59 °C again.
ON	OFF	Computer start-up/normal operational state/shutdown delay time
ON	ON	Screen defroster active
ON	FLASHING	Ambient temperature lies outside of the permitted range, i.e. < -30 or > +50 °C

3.6. Software keyboard (optional)

The optional DLoG software keyboard brings the complete standard keyboard with function keys and numeric pad directly to your DLT-V72 screen – with easy touch operation.
Any entries made, for example, letters and numbers, are passed to the currently active application program.

Example for a software keyboard (the layout can be configured individually):

Fig. 3.4: Software keyboard

If the software keyboard was ordered together with the DLT-V72 industrial PC, then the program will have been fully pre-licensed by the Advantech-DLoG production department. For subsequent installation, an installation program is available.

The manual for the DLoG software keyboard is available in the Download Center at www.advantech-dlog.com.

3.7. Operating the DLT-V72 with UPS

WARNING

Personal injury due to short-circuit, fire, chemical burns, toxic substances.

DLT-V72 devices with integrated UPS contain lithium-ion battery packs. These can ignite if handled or stored improperly (risk of fire), cause chemical burns or release toxic substances.

- ⇨ Use care when handling lithium-ion battery packs.
- ⇨ Do not damage lithium-ion battery packs; do not drill through and do not crush or drop.
- ⇨ Do not allow water or other liquids to come into contact with the device (exercise particular caution with corrosive liquids).
- ⇨ Do not allow it to come into contact with fire.

For details about the UPS, see section *12.1 Integrated UPS (optional)*.

4. Unpacking, transport and storage

4.1. Unpacking

- ⇨ Open the packaging carefully to prevent damaging the device inside.
- ⇨ Save the packaging material (for possible forwarding transports or returns of the DLT-V72).
- ⇨ Check the shipment for completeness and any possible damage.

- ⇨ **Always keep the supplied manuals and documents.**

4.2. Transport

WARNUNG

Risk of injury due to weight and sharp-edged parts.

The DLT-V72 can fall down and cause injuries due to its weight.
The strain relief rail can have sharp edges and cause cutting injuries.

- ⇨ Always hold the DLT-V72 by the housing with both hands.
- ⇨ Never use the antenna cap as a handle. It can break due to the weight involved.
- ⇨ Do not hold the DLT-V72 by the strain relief rail.
- ⇨ Use the assistance of a second person for installation work.

4.3. Storage

4.3.1. DLT-V72 without UPS

- ⇨ Observe the permissible storage temperature range in the manual, section *11.2 Environmental conditions*.

4.3.2. DLT-V72 with UPS (includes lithium-ion battery pack)

- ⇨ **Observe the permissible storage temperature range in the manual, section *12.1.1 Battery pack specifications*.**

- ⇨ **Observe the intended use of the DLT-V72, e.g.: no use in EX zone (potentially explosive), no use in life-supporting systems or security-critical facilities.**
For details, see manual, section *2.1 Intended use* .

WARNING

Personal injury due to short-circuit, fire, chemical burns, toxic substances.

Devices with integrated UPS (optional) contain lithium-ion battery packs. These can ignite if handled or stored improperly (risk of fire), cause chemical burns or release toxic substances.

- ⇨ Use care when handling lithium-ion battery packs.
- ⇨ Do not damage lithium-ion battery packs; do not drill through and do not crush or drop.
- ⇨ Store lithium-ion battery packs separately from acids and other materials.
- ⇨ Store the DLT-V72 and accessories in a cool and dry location and comply with the specified storage temperature and air humidity.
- ⇨ Provide for sufficient ventilation of the storage location.
- ⇨ Do not allow water or other liquids to come into contact with the device (exercise particular caution with corrosive liquids).
- ⇨ Do not store the device near sources of heat or fire, open flames or heaters.
- ⇨ Do not allow it to come into contact with fire.
- ⇨ Have suitable fire extinguishers ready (foam or powder) in accordance with safety regulations.

Prevent deep discharge

NOTICE: Physical damage

Deep discharge of the battery pack due to incorrect storage.

Storing the lithium-ion batteries incorrectly will cause them to discharge completely (deep discharge) and thus damage them irreparably.

- ⇨ Store the DLT-V72 with lithium-ion battery packs a maximum of 6 (six) months without charging it.
- ⇨ The lithium-ion battery pack is charged automatically when the DLT-V72 is connected to the voltage supply.
- ⇨ It is not permitted to charge the DLT-V72 lithium-ion battery pack with external chargers.

4.3.3. Protecting touchscreens during storage

NOTICE: Physical damage

Damage to the touchscreen due to incorrect storage.

- ⇨ Protect touchscreens from sharp edges, impacts, and heavy objects.
- ⇨ If stacking, do not stack higher than four devices.
- ⇨ Place devices front-to-front in this case.
  The VESA mounting point on the rear side of the device can damage the touchscreen of another device.
- ⇨ Use protective material (non-flammable!) between the devices as a precaution.

4.4. If a return/repacking is necessary

If the DLT-V72 is being returned to the manufacturer, a completely filled-out return package slip must be enclosed with every DLT-V72.

You can find this return package slip:

- at the end of this manual
- and on the Internet at www.advantech-dlog.com

If you repack the device, please ensure that the cling wrap in the cardboard frame is positioned towards the front of the device so that it can provide the proper protection.

5. Operating systems (optional)

The following operating systems are available for the individual DLT-V72 models (at the time of the creation of the manual, as of: April 2017):

Operating systems	Available for:		
	DLT-V7210	DLT-V7210K	DLT-V7212
MS Windows® 10 IoT Enterprise	x	x	x
MS Windows® 7 Professional	x	x	x
MS Windows® Embedded Standard 7 (WES7)	x	x	x
MS Windows® Embedded 8.1 Industry Pro	x	x	x
MS Windows® Embedded 8 Standard (WE8S)	x	x	x
Advantech-DLoG Linux-Image, Debian-based	x	x	x
Advantech-DLoG Android™	x	–	x

5.1. MS-Windows (optional)

5.1.1. General

If a DLT-V72 with preinstalled operating system is placed into operation, this operating system will be loaded after the BIOS system messages. System-specific device drivers (e.g. for graphics, sound, network, touchscreen) are already installed.
In DLT-V72 units with a pre-installed operating system, the system is located on the C partition.

When a DLT-V72 is started up for the first time without a pre-installed operating system, the user needs to carry out a number of steps that will vary depending on the system to be installed. Refer to the relevant operating system manual for specific instructions.

5.1.2. Configuring the front keys, automatic shutdown, etc.

The **DLoG Config** software is used to configure DLT-V72 devices with a Microsoft Windows operating system.

For configuring DLT-V72, the DLoG Config version **5.0** or higher is required.

Configuration examples:

- Automatic shut down
- Wi-Fi status display
- Front-key assignment
- Network settings

And depending on the equipment of the DLT-V72 also:

- Battery pack charge settings (only on devices with optional UPS)
- Screen defroster heating function (only on devices with optional screen defroster)
- Operation with gloves possible (only on devices with optional PCT touchscreen)

The DLoG Config manual is available in the Download Center at www.advantech-dlog.com.

5.1.3. WES 7 and Win 7 Prof.: USB icon in the taskbar

Under WES 7 and Win 7 Professional, please observe:

⇨ Do not click on the **Eject DLT-V72xx** button, which fades in on the taskbar using the **Eject Media** icon: 

If the **Eject DLT-V72xx** button is clicked on:

- Malfunctions during the communication with the environment controller are possible.
- The DLT-V72 must be restarted.

5.1.4. Energy options and battery pack durability

Valid for all MS Windows operating systems:

ATTENTION: Physical damage

All DLT-V72 devices with MS Windows have had the **power options** set at the factory so that the optimal duration of the battery pack can be achieved: The power saving plan is set to **power options (DLoG).**

⇨ Do not modify or deactivate the **power options (DLoG)**.

Under certain circumstances and configurations a modification may cause the battery pack of the integrated UPS to stop functioning and need to be sent in for repair.

5.1.5. Suppress automatic Windows 10 updates

Under Windows 10, the automatic Windows updates can no longer be deactivated; the "**Never check for updates**" setting in the **Windows Update** dialog is not available.

With the following entry in the Windows registry, the **"Never check for updates"** setting can be set anyway:

⇨ Manually create the following entry in the Windows registry (type "dwords"):

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows\WindowsUpdate\AU]
"NoAutoUpdate"=dword:00000001
[HKEY_LOCAL_MACHINE\SOFTWARE\WOW6432Node\Policies\Microsoft\Windows\WindowsUpdate\AU]
"NoAutoUpdate"=dword:00000001
```

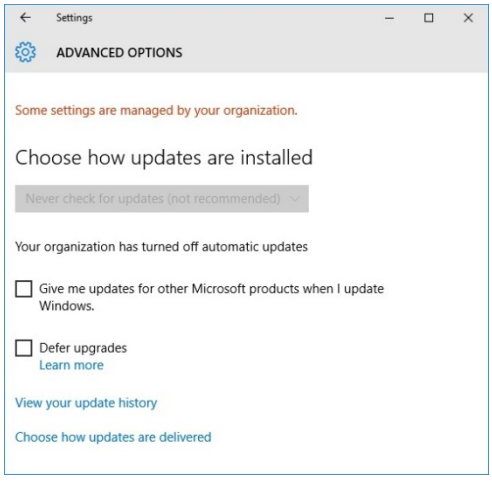
⇨ Restart Windows.

⇨ Via **Start -> Settings -> Update & Security,** switch to the **Windows Updates** dialog.

⇨ Click on **Retry** to search for updates.

⇨ Click on **Advanced Options**.
The **Never check for updates** setting is now set.

Fig. 5.1: Automatic Windows 10 Updates



To deactivate **Never check for Updates**:

⇨ Delete the entry manually from the Windows registry.

⇨ Restart the computer.

⇨ Search for updates.

5.2. Android

You can find operating system information on DLT-V72 devices with **ADLoG Android™** in the "ADLoG Android™ Manual". You can request this manual from the ADLoG Helpdesk (see *Technical Customer Support)*.

5.3. Linux (optional)

You can find operating system information on DLT-V72 devices with **ADLoG Linux** in the "ADLoG Linux Manual". You can request this manual from the ADLoG Helpdesk (see *Technical Customer Support)*.

6. Device configuration

WARNING

Risk of injury and damage due to improper configuration.

These instructions are directed to skilled personnel.

⇨ Only qualified skilled personnel (e.g. IT personnel with good knowledge of PCs, operating systems and wireless networks) may configure the DLT-V72.

If the DLT-V72 is incorrectly configured, the DLoG GmbH warranty for this device will be void.

6.1. General settings

DLT-V72 terminals are configured with the following software tools depending on the installed operating system:

DLT-V72 with MS Windows: "DLoG Config"

Configured are, for example, automatic shutdown, Wi-Fi status display, front key assignment, network settings, etc. Start DLoG Config via **Start -> Programs** or with the icon in the taskbar.
Default password: "gold".

The "DLoG Config Manual" is available in the Download Center at www.advantech-dlog.com.

DLT-V72 with Android: "MDevice Android"

You can find configuration information on DLT-V72 devices with **ADLoG Android™** in the "ADLoG Android™ Manual". You can request this manual from the ADLoG Helpdesk (see *Technical Customer Support)*.

DLT-V72 with ADLoG Linux: "ADLoG Standard Linux image configuration"

You can find configuration information on DLT-V72 devices with **ADLoG Linux** in the "ADLoG Linux Manual". You can request this manual from the ADLoG Helpdesk (see *Technical Customer Support)*.

6.2. Wi-Fi configuration

Depending on the optional equipment and intended use of the DLT-V72, the settings and access data for Wi-Fi networks must be defined.

6.2.1. Safety notice

CAUTION

Danger of radiation emission.

This device emits high-frequency energy (abbreviation: HF). To protect people from HF radiation and to comply with country-specific regulations, e.g. of the USA and Canada:

⇨ Install the DLT-V72 so that persons maintain a minimum distance of 20 cm to the antenna.

The DLT-V72 may only be utilized together with the following wireless modules:

PE15N
FCC ID: TWG-SDCPE15N
IC ID: 6616A-SDCPE15N

WPEA-252NI
FCC ID: RYK- WPEA252NI
IC ID: 6158A-WPEA252NI

For the Wi-Fi configuration: Set the correct transmitting power and frequency.

Risks to health are possible due to excessive radio wave emission if the transmission power and the frequency are set incorrectly during the Wi-Fi configuration.

⇨ Observe the applicable regulations for your deployment location/country with regard to frequencies and the maximum permissible transmitting power. Responsibility for this lies with the company operating the DLT-V72. The regulatory authorities in the relevant country can provide information on this.

Country-specific regulations

Example Germany: In Germany according to regulations published in the gazette 89/2003 of the RegTP (regulating body for telecommunications and mail, now: “Bundesnetzagentur”) - Federal Network Agency for electricity, gas, telecommunications, post and railway - the maximum permissible transmitting power, EIRP (Equivalent Isotropically Radiated Power), in the 2.4 GHz frequency band is set at 20 dBm (100 mw).

⇨ Set the transmitting power of the Advantech-DLoG antenna so that the permitted EIRP limit value is complied with.

Examples worldwide:

Region	Regulatory authority
EU	EU Verification Notified Body V1.9.1 ETSI
China	CNCA-07C-031
Japan	Japan SDoC, Certificate
Taiwan	Taiwan Certification
Canada	Canada Certification Body
USA	USA Certification
Brazil	Brazil Certification and Homologation
Russia	Russian Certification
Argentina	Argentinian Certification, CNC

WARNING

Electromagnetic radio frequency energy can interfere with technical devices.

Some technical equipment in hospitals and aircraft is not shielded against radio frequency energy.

⇨ Do not use the DLT-V72 in aircraft or hospitals without receiving prior authorization. Use in both is only permitted if such authorization has been obtained.

DLT-V72 industrial PCs can affect the functioning of implanted medical devices such as pacemakers and cause them to malfunction.

⇨ Do not use the DLT-V72 near pacemakers.

⇨ Always keep a distance of at least 20 cm between a pacemaker and the DLT-V72 to reduce the risk of interference.

⇨ Before using the device please obtain information about the use of the device within certain areas (e.g. airports, hospitals, etc.) and also about the respectively applicable regulations and obtain an approval for the operation of the device, if necessary.

6.2.2. Transmitting power

The transmitting power depends on:

- Wireless card (set transmission power).
- Connecting cables.
- Antenna gain.

Help table for the correct setting:

Translation between mW and dBm																						
dBm	-1	2	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
mW	1	2	3	4	5	6	8	10	12	15	20	25	30	40	50	60	80	100	125	150	200	250

6.2.3. Antenna solutions for use in Germany

The Advantech-DLoG antenna solutions are based on the prevailing IEEE 802.11 standard. This standard allows wireless data transfer at rates from 1 Mbps to 54 Mbps (300 Mbps if using IEEE 802.11n) using the 2.4 GHz and 5 GHz frequency band.

6.2.4. Wi-Fi configuration with LCM or WZC

A default profile with basic settings for Wi-Fi operation is defined at the factory. To create a custom profile, please use the Wi-Fi configuration program that is preinstalled on your DLT-V72.
Depending on the Wi-Fi driver used, the following configuration programs are available:

Configuration program	
Laird Connection Manager (LCM)	Password: SUMMIT (Upper case mandatory)
Windows Zero Configuration (WZC)	No password required

6.2.5. Laird Connection Manager (LCM)

Start LCM:

⇨ By clicking the **LCM** icon on the desktop

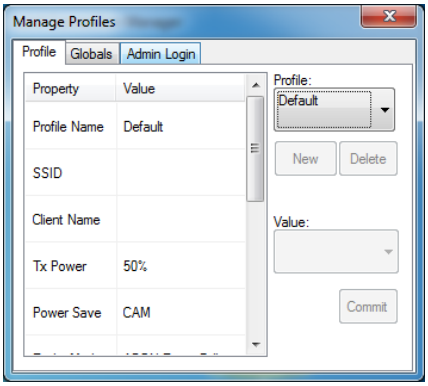
⇨ Or by choosing **Start > Programs > Summit > Laird Connection Manager**

Fig. 6.1: LCM Configuration, Manage Profiles

Depending on the configuration, you may have to enter a password.

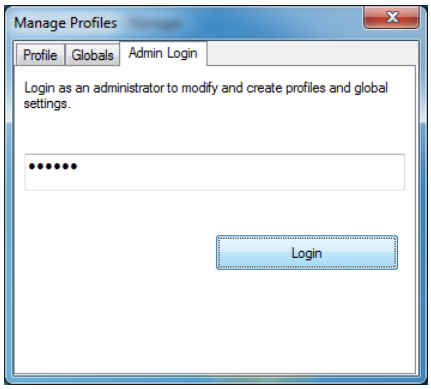
⇨ To do this, click **Configuration -> Manage Profiles**.

Fig. 6.2: LCM Manage Profiles, Admin Login



⇨ Click the **Admin Login** tab.

Fig. 6.3: Entering the LCM password SUMMIT



Default password: **SUMMIT**.

Must be entered in upper-case characters.

6.2.6. Windows Zero Configuration (WZC)

You will find information on WZC in the Microsoft Windows online help system.

6.2.7. Wi-Fi configuration DLT-V72 with ADLoG Android

You can find configuration information on DLT-V72 devices with **ADLoG Android™** in the "ADLoG Android™ Manual". You can request this manual from the ADLoG Helpdesk (see *Technical Customer Support)*.

6.2.8. Wi-Fi configuration DLT-V72 with ADLoG Linux

You can find configuration information on DLT-V72 devices with **ADLoG Linux** in the "ADLoG Linux Manual". You can request this manual from the ADLoG Helpdesk (see *Technical Customer Support)*.

6.3. Automatic shut down

6.3.1. Functional description

The DLT-V72 is equipped with an automatic shutdown module.

If wired up accordingly, the DLT-V72 conveniently switches off together with the vehicle's ignition.

As disconnecting the power supply during operation can lead to data loss, the operating system needs to be shut down normally using the appropriate hardware and software installed on the system when the ignition is switched off.

The DLT-V72 is connected to the vehicle with three supply cables.

DC+ and DC- are directly connected to the power supply of the vehicle, the connection is of course run through fuses.

The supply voltage connected is then linked to the DLT-V72's ignition input via a switch, for example, the key switch of the ignition (also with a fuse).

Sequence

When the vehicle ignition is turned on or the DLT-V72 <Power> button is pressed, the DLT-V72 checks its internal temperature and runs a test to confirm that the automatic shutdown function is working.

If this check of the environmental conditions is successful, the DLT-V72 starts the operating system normally.

Once these checks have been successfully completed, the DLT-V72 starts the operating system. No environmental conditions (e.g. the internal temperature of the device or the state of the ignition input) are checked for one minute during startup.

After one minute, the DLT-V72's internal temperature and the state of the ignition input are constantly monitored.

If the DLT-V72's internal temperature reaches a critical level, a controlled shutdown of the operating system is carried out. The computer will remain switched off until the temperature is once again within the permitted range.

If the ignition input is grounded or isolated during normal operation of the DLT-V72, the device will switch to a delayed shut-off state.

The device will continue to operate normally in this state until the shut-off delay (e.g. 20 minutes) has elapsed.

If the ignition is turned on again during this shut-off delay, the DLT-V72 will revert to a normal operational state.

Once the shut-off delay (after run time) has elapsed, the operating system will shut down and the device will automatically shut down (e.g. after one minute or a signal from the operating system).

Device shut down

If the operating system is shut down, all applications will be notified via the Windows message "WM_QUERYENDSESSION" first.

Every application must then respond within the time set in the registry. If there is no response within the preset time, the application will be hard-terminated.

It may not be possible to close an application automatically if it has unsaved data. Example: For example, the WORDPAD.EXE program (included in Windows) cannot be closed automatically if there are unsaved changes. In such a situation, WORDPAD.EXE will acknowledge the "WM_QUERYENDSESSION" Windows message by prompting the user to choose whether to save or not.

All applications that can be terminated without user confirmation using the keyboard shortcut <ALT> + <F4> will normally also respond correctly to the "WM_QUERYENDSESSION" message and therefore do not need to be hard-terminated.

To ensure that important data is saved correctly, the application must respond appropriately to “WM_QUERYENDSESSION”, i.e. the backup data must be saved without user confirmation and within the preset time.

6.3.2. Automatic shutdown configuration

Configure automatic shutdown DLT-V72 with MS Windows

The "DLoG Config Manual" is available in the Download Center at www.advantech-dlog.com.

Configure automatic shutdown DLT-V72 with ADLoG Android

You can find configuration information on DLT-V72 devices with **ADLoG Android™** in the "ADLoG Android™ Manual". You can request this manual from the ADLoG Helpdesk (see *Technical Customer Support)*.

Configuring automatic shutdown DLT-V72 with ADLoG Linux

You can find configuration information on DLT-V72 devices with **ADLoG Linux** in the "ADLoG Linux Manual". You can request this manual from the ADLoG Helpdesk (see *Technical Customer Support)*.

7. Mechanical installation

Recommend sequence for the mechanical installation

Requirement: The vehicle/installation location must be prepared (e.g. connection to the ignition, correct voltage, etc.)

- Determine a suitable mounting position for the DLT-V72.
- Secure device mounting at the vehicle (RAM Mount etc.).
- Connect external accessories to the DLT-V72.
- Install an easily accessible disconnecting device, such as a switch close to the device.
- Connect all cables.
- Close the DLT-V72 with cable cover.
- Mount the DLT-V72 on the device mounting bracket.

7.1. Safety notice – observe before installing

WARNING

Risk of injury and damage due to improper mechanical installation.

These mounting instruction are directed to skilled personnel. Only qualified skilled personnel may perform the mechanical installation work on the DLT-V72.

If the DLT-V72 is incorrectly mounted, any DLoG GmbH warranty for this device will be void.

The mounting of the DLT-V72 must not endanger the safety of the operating personnel.
Example: When mounting to forklifts, the driver's field of view must remain free.

Hazardous voltage, electric shock from contact with live parts.

⇨ Do not put the DLT-V72 into operation if it is visibly damaged.

⇨ Do not open or modify the DLT-V72.

Risk of injury due to weight and sharp-edged parts.

The DLT-V72 can fall down and cause injuries due to its weight.
The strain relief rail can have sharp edges and cause cutting injuries.

⇨ Always hold the DLT-V72 by the housing with both hands.

⇨ Never use the antenna cap as a handle. It can break due to the weight involved.

⇨ Do not hold the DLT-V72 by the strain relief rail.

Use the assistance of a second person for installation work.

NOTICE: Physical damage

Damage and scratching of the touchscreen without transport protective film.

The front display of the DLT-V72 is protected during transport by a transparent film. This film should remain on the front display during assembly to avoid damage to the front display surface.

⇨ Only remove the film after all of the installation work has been completed.

7.2. Mounting the DLT-V72 at the deployment location

Stationary or on vehicles

WARNING

Risk of injury and damage due to improper deployment location.

⇨ Observe the intended use of the DLT-V72, e.g. not in potentially explosive areas, not in life-supporting facilities.

⇨ Ensure that the deployment location of the DLT-V72 complies with the permissible environmental conditions.

Risk of accident on vehicles due to unstable attachment of the DLT-V72.

⇨ When installing the DLT-V72, make sure that if the bracket breaks (e.g. because of a stress fracture) no one will be injured.

⇨ Alternatively please put appropriate safety measures in place (e.g. install a security cable in addition to the mounting bracket).

Radio wave emission in the vicinity of persons.

To ensure that the limits set for exposure to radio waves are not exceeded:

⇨ Install the DLT-V72 so that persons maintain a minimum distance of 20 cm to the antenna.

DANGER

Risk of accident on vehicles due to unexpected vehicle emergency stop because of electro-conductive connection of the DLT-V72 to the vehicle chassis.

Due to a variety of technical properties of forklifts and forklift trucks, it can be necessary to electrically isolate DLT-V72 from the chassis of the vehicle to prevent malfunctions.

The necessity of this must be studied on a case-by-case basis, however, it is recommended for vehicles with potential-free chassis.

- ⇨ For example, using rubber buffers ensures that the terminal has no electrically conducting connection to the vehicle chassis.
- ⇨ If peripheral equipment (such as scanners, printers, scales or similar), which has its own power supply unit is used, you must ensure that the power supply units of these peripherals are galvanically separated from the supply of the vehicle. Moreover, the peripheral equipment and its cabling must be attached electrically isolated.
- ⇨ If external antennas are being used, you must ensure that the antennas are isolated at the mounting point on the vehicle chassis.

NOTICE: Physical damage

Installation environment without cooling air can overheat/damage the DLT-V72.

The DLT-V72 employs a passive cooling concept whereby the waste heat generated inside the device is emitted from the surface of the housing.
For this system to function properly, sufficient fresh air circulation is required.
If there is no access to fresh cooling air, it may result in overheating and severe damage to the device.

Never install the system in a closed environment where the cooling air is unable to dissipate accumulated heat to the outside.
The maximum permissible ambient temperature for the entire system needs to be taken into account for the specific application area.

7.3. Attaching accessories to the DLT-V72

For example: mounting bracket, scanner mounting

ATTENTION: Physical damage

Only use mounting brackets, accessories and mounting materials that have been tested and approved by ADLoG for the respective DLT-V72. Otherwise, any DLoG GmbH warranty for this device will be void.

All mounting brackets, accessories and mounting materials supplied by ADLoG are only intended to be used for attachment of the industrial PCs and the peripheral devices and may not be misused.

7.3.1. VESA mounting hole pattern

The rear side of the DLT-V72 has a VESA-compatible mounting hole pattern with 75 x 75 mm for a RAM Mount bracket or swivel mounting.

Fig. 7.1: VESA mounting hole pattern on the rear side of the DLT-V72

Screw-in depth VESA mounting hole pattern: M6 x 6 mm

Suitable mounting material:

- Cylinder-head screws int.hex DIN912 M6
- Washers ISO 8738 (DIN 1440)-A6-A2

WARNING

Risk of accident during vehicle operation if the mounting of the DLT-V72 becomes loose and breaks while driving.

Ensure the following when attaching the mounting on the VESA mounting hole pattern:

- Special **mechanical knowledge** is required for correct mounting!
- Use suitable mounting material.
- Use suitable screws: Screws that are too long can penetrate the back of the DLT-V72 and cause irreparable damage. Screws that are too short do not provide secure mounting.
- Use suitable washers.
- Observe the maximum screw-in depth of the hole of the mounting hole pattern: The recommended screw-in depth of Dx1 always applies (screw diameter x 1).
- If you ordered a bracket from ADLoG, it includes the suitable screws and washers. Please use them (see examples).

Examples for RAM Mount Set mounting materials

RAM Mount Set short (arm length, 130 mm)	RAM Mount Set long (arm length 215 mm)
ADLoG order no: DL-CMEMT70129800	ADLoG order no: DL-CMEMT70129700
Fixing plate RAM Mount VESA	Fixing plate RAM Mount VESA
Mounting bracket VESA	Mounting bracket VESA
Washer spring A6 DIN128 FSt galvan.	Washer spring A6 DIN128 FSt galvan.
Cylinder-head screws int.hex DIN912 M6x16 V2A	Cylinder-head screws int.hex DIN912 M6x16 V2A
Washer ISO 8738 (DIN 1440)-A6-A2	Washer ISO 8738 (DIN 1440)-A6-A2

7.3.2. Attach the ADLoG mounting bracket

The housing of the DLT-V72 has holes provided for attaching an ADLoG mounting bracket.

Fig. 7.2: ADLoG mounting bracket on the DLT-V72

Screw-in depth: M6 x 6 mm

Suitable mounting material:

- Cylinder head screws DIN912 M6
- Washers DIN 125 - A 6.4

WARNING

Risk of accident during vehicle operation if the mounting of the DLT-V72 becomes loose and breaks while driving.

Please observe the following when attaching the ADLoG mounting bracket:

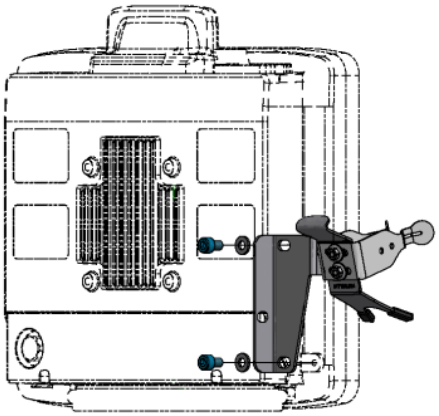
- Special **mechanical knowledge** is required for correct mounting!
- Use suitable mounting material (screws and washers).
- Observe the maximum screw-in depth of the holes of the DLT-V72: The recommended screw-in depth of Dx1 always applies (screw diameter x 1).

7.3.3. Attach the ADLoG accessories

The housing of the DLT-V72 has holes provided for attaching an ADLoG accessory.

Example:

Fig. 7.3: Scanner mounting attachment



Screw-in depth: M6 x 6 mm
Suitable mounting material:
Cylinder head screw DIN 912 M6
Washer ISO 8738 - A6-A2

Installation sequence if ADLoG mounting bracket and additional accessory are being attached

If you are mounting an ADLoG mounting bracket and a keyboard holder:

- Attach the mounting bracket to the DLT-V72 first.
- Then mount the keyboard holder.
- Only mount the complete system at the deployment location, e.g. to the forklift.

Please note: In addition to the mounting bracket, one accessory holder per side can still be attached in each case.

8. Electrical installation, cable connection, cable cover

8.1. Safety notice – observe before connecting

WARNING

Risk of injury and damage due to improper electrical installation.

These instructions are directed to skilled personnel.

⇨ Only qualified skilled personnel are permitted to perform the electrical installation of the DLT-V72.

⇨ Comply with the appropriate national installation regulations for any and all cable routing.

Electrical shock due to insufficient EMERGENCY shut-off of the vehicle.

If the EMERGENCY-OFF switch of the vehicle does not switch off the DLT-V72, there is a risk of electrical shock.

⇨ Install the DLT-V72 and the EMERGENCY-OFF switch so that the DLT-V72 also switches off when the EMERGENCY-OFF switch is operated.

⇨ Important: If a DLT-V72 with integrated UPS is installed in a vehicle, the EMERGENCY-OFF switch of the vehicle has no effect on the DLT-V72. This also applies to the peripherals supplied by the device.

Deployment location fueling stations, chemical plants.

The operation of electrical equipment at locations where flammable gases or vapors are present poses a safety hazard.

⇨ Turn off the DLT-V72 when you are near gas stations, fuel depots, chemical plants or places where blasting operations take place.

NOTICE: Physical damage

Overvoltage on the DLT-V72 when charging the vehicle battery.

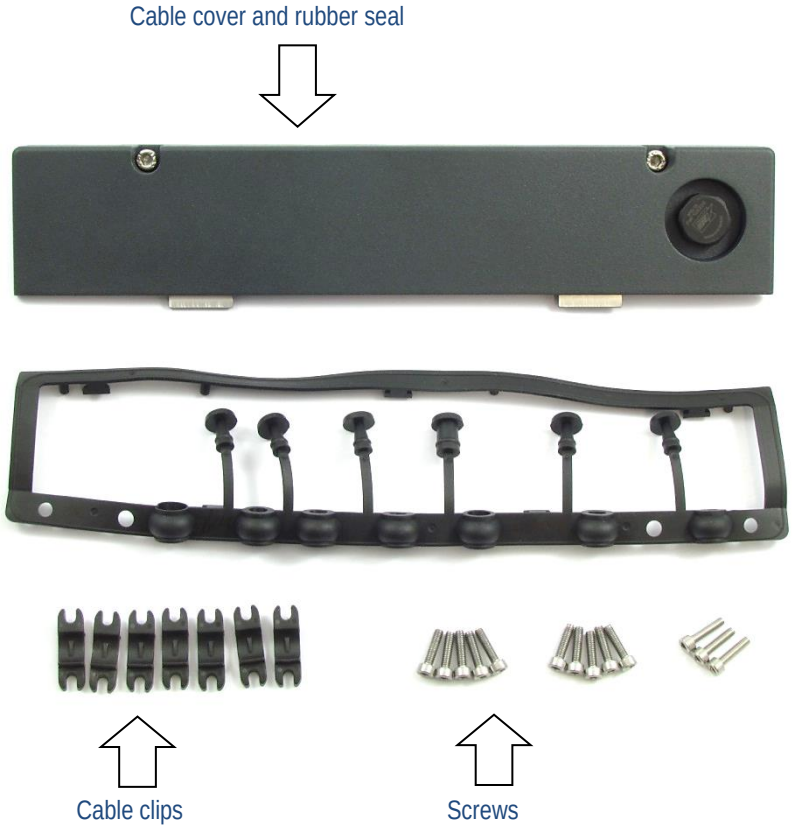
The DLT-V72 must be disconnected from the vehicle battery while the vehicle battery is being charged. Or it must be ensured that the maximum permitted input voltage of the DLT-V72 is not exceeded.

8.2. Preparations

- ⇨ Lay out ready all cables that are to be connected to the DLT-V72.
- ⇨ Select the appropriate slots on the connector panel of the DLT-V72.
- ⇨ Test in which order the cables best fit in the cable compartment.

8.2.1. Material required

Cable sealing set (scope of delivery: cable cover)



Tools

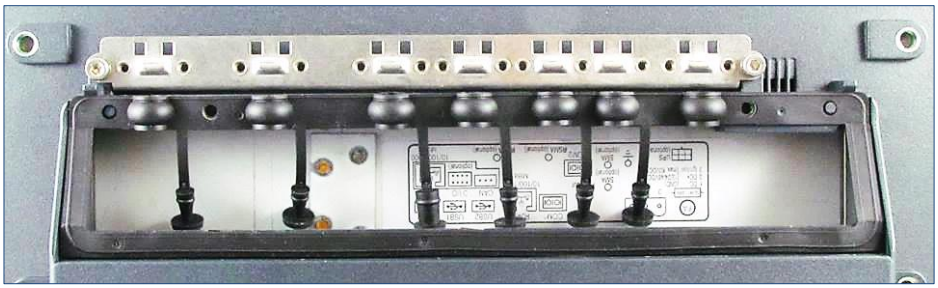
- – Hexagon screwdriver, size 3
- – Philips screwdriver, size 3
- – Torque wrench
- – Allen wrench, size 2.5
- – Flat head screwdriver, size 0
- – Socket wrench, size 7

8.3. Inserting the rubber seal in the cable compartment

⇨ Place the rubber seal in the frame of the cable compartment (see figure).

⇨ Press the plugs of the rubber seal into the holes of the frame.

Fig. 8.1: Rubber seal inserted in the cable compartment



WARNING

Electric shock, fire due to incorrect cable routing or insufficient grounding.

⇨ Use only original Advantech-DLoG power cables; these meet the specific requirements for low-temperature flexibility, UV resistance, oil resistance, etc.

⇨ Make sure that the power supply cables are run without kinks and are protected (securely protected against crushing and abrading).

⇨ The DLT-V72 may only be connected to a SELV circuit (Safety Extra Low Voltage). The SELV circuit is a secondary circuit that is designed and protected so that its voltages will not exceed a safe value both when operating correctly or if a single error occurs.

⇨ The DC+ connecting cable must be protected by a fuse (30 AT max.).

⇨ The ignition connecting cable must be protected by a fuse of the following type: 5x20 mm T 125 mA L / 250 V, for example, a Wickmann 195-125 mA / 250 V.

⇨ Observe correct voltage ranges.

⇨ Ensure that power supply cables are fused correctly.

⇨ Read the labeling on the cable and connect the power supply cable with the correct polarity.

⇨ Cut the supply cable to the minimum length. This avoids tangled cables and improves the quality of the power supply.

⇨ Connect the power supply cable to a suitable place. Ensure that the connecting cable has an adequate cross section and ampacity at the connection point.

NOTICE: Physical damage

Observe the potential ratios.

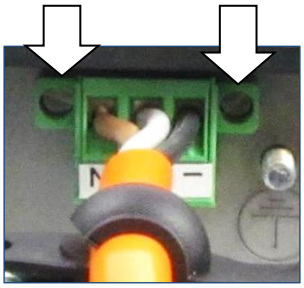
On the DLT-V72, the logic ground and the shield ground are firmly connected to each other. Logic ground is the ground (GND) used to supply the internal parts and components such as the display or CPU. All cable shields and the housing are connected to shield ground.

The chassis of some forklifts is on DC+. This means that the DLT-V72 chassis is also on DC+. Short circuits can arise when, for example, the ground potential of a peripheral device is on DC-. This may cause malfunctions or irreparable damage to the DLT-V72.

- ⇨ Always attach ring tongue of the supply voltage cable to the provided ground bolt situated on the connector panel.
- ⇨ The other end of the yellow-green power supply cable must be connected to the vehicle's chassis.
- ⇨ Connect the power supply cable of the DLT-V72 as directly as possible to the battery and not to power supply lines with a great deal of interference (e.g. the engine power supply) or otherwise affected by consumers.
- ⇨ Connecting the DLT-V72 to large electrical loads, such as converters for the forklift motor may result in random restarts, malfunctions and/or irreparable damage to the device.
- ⇨ If you want to connect devices fed by other power sources to the DLT-V72 (e.g. printers), be sure to power up the peripheral devices at the same time or after the DLT-V72; otherwise, you may encounter start-up problems, malfunctions or even irreparable damage to the device.

8.3.1. Plugging in and screwing on the power supply cable

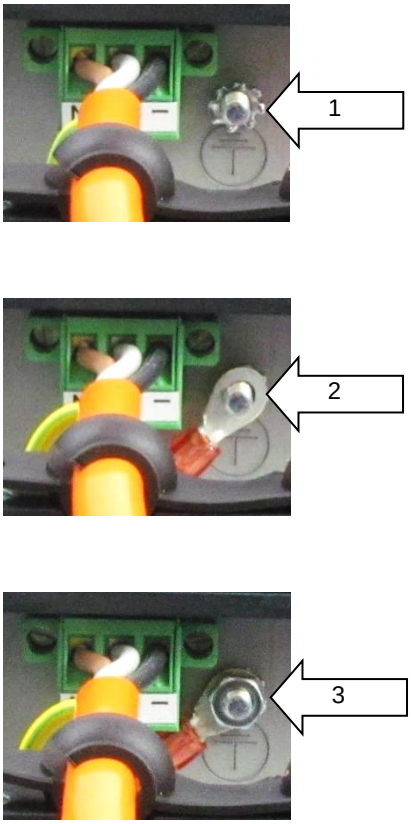
Fig. 8.2: The power supply cable secured, cable inserted in rubber seal



- ⇨ Plug the power supply cable into the power supply plug-in location.
- ⇨ Screw both mounting screws hand-tight.
- ⇨ Fold open the round cable passage in the rubber seal.
- ⇨ Insert the power supply cable.

8.3.2. Securing the ground using ring tongue to the ground bolt

Fig. 8.3: Ring tongue secured to the ground bolt



⇨ Secure the ring tongue of the power supply cable to the ground bolt.

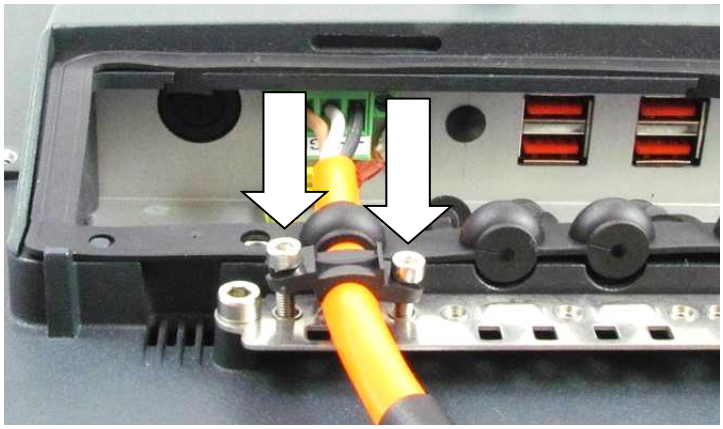
ATTENTION For correct grounding, it is important to have the correct order of the components on the ground bolt (from inside to outside):

1. Toothed washer (internal).
2. Ring tongue of the power supply cable (flat side faces the DLT-V72 connector panel).
3. Tightening the nut hand-tight.

8.3.3. Securing the power supply cable to the strain relief rail

- ⇨ Place one cable clip on the power supply cable.
- ⇨ Secure the cable clip to the strain relief rail using 2 mounting screws (ISO 4762-M4x10-A2 cylinder-head screws).
- ⇨ Tighten the mounting screws alternatingly!
- ⇨ **ATTENTION** Tighten the mounting screws sufficiently but on no account pinch or crush the cable. If you do, the cables may break or the cable insulation may get damaged.

Fig. 8.4: Cable clip secured to the strain relief rail.



8.4. Connecting the USB, Ethernet and COM cables

NOTICE: Physical damage

Observe the following when connecting/removing external devices on the DLT-V72.

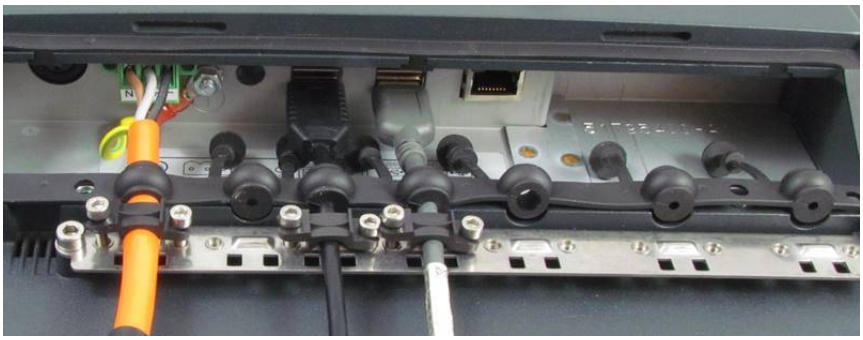
- ⇨ Only use accessories that have been tested and approved by Advantech-DLoG for the respective DLT-V72.
- ⇨ The DLT-V72 may not be connected to the power supply if external devices are being connected/removed (not applicable for USB devices)
- ⇨ Otherwise considerable damage could be caused to both the DLT-V72 and the peripheral devices.
- ⇨ Make sure that peripherals with their own power supply are either switched on at the same time as the DLT-V72 or after the start of the DLT-V72.
- ⇨ Otherwise, you must ensure that a backflow from the external device to the DLT-V72 cannot take place.
- ⇨ Only power up the DLT-V72 when all devices have been connected and the DLT-V72 has been closed correctly (remember the cable cover!). Otherwise, you may damage the DLT-V72.

Please observe the mounting instructions supplied with the optional accessory.

8.4.1. USB cable

- ⇨ Plug the required USB cable into the associated port.
- ⇨ Fold open the respective round cable passage in the rubber seal.
- ⇨ Insert the USB cable.
- ⇨ Secure each USB cables to the strain relief rail with cable clips and screws.
- ⇨ **ATTENTION** Tighten the mounting screws sufficiently but on no account pinch or crush the cable. If you do, the cables may break or the cable insulation may get damaged.

Fig. 8.5: USB cable on the connector panel; secured to the strain relief rail



8.4.2. Ethernet cable

- ⇨ Plug the Ethernet cable into the associated port.
- ⇨ Fold open the round cable passage in the rubber seal.
- ⇨ Insert the Ethernet cable.
- ⇨ Secure Ethernet cable to the strain relief rail with cable clips and screws.
- ⇨ **ATTENTION** Tighten the mounting screws sufficiently but on no account pinch or crush the cable. If you do, the cables may break or the cable insulation may get damaged.

Fig. 8.6: Ethernet cable on the connector panel; secured to the strain relief rail

8.4.3. COM cable

- ⇨ Plug the required COM cable into the associated port.
- ⇨ Fold open the respective round cable passage in the rubber seal.
- ⇨ Insert the COM cable.
- ⇨ Secure the COM cable to the strain relief rail with cable clips and screws.
- ⇨ **ATTENTION** Tighten the mounting screws sufficiently but on no account pinch or crush the cable. If you do, the cables may break or the cable insulation may get damaged.

Fig. 8.7: COM cable on the connector panel; secured to the strain relief rail

8.5. Closing off unused cable openings

⇨ Close off all unused cable openings of the rubber seal using the accompanying blind plugs so that they are sealed.

Fig. 8.8: Unused cable outlets sealed off with blind plugs

8.6. Attaching the cable cover

NOTICE: Physical damage

Not sealed device due to incorrect attachment of the cables and the cable cover.

The protection class/category of the DLT-V72 is only ensured if the cable cover is properly installed.

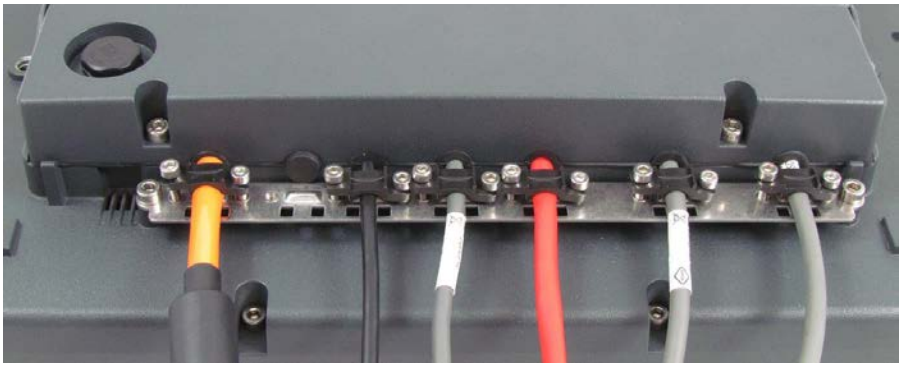
Improper installation can result in liquid penetrating into the DLT-V72 during operation. There is then a risk of short-circuiting, corrosion and wear.

⇨ Place the cable cover in the DLT-V72 housing slot.

⇨ Screw the cylinder-head screws loosely into the holes of the cable cover.

⇨ Then fully tighten the screws with 3 Nm torque.

Fig. 8.9: Cable cover closed and screwed together

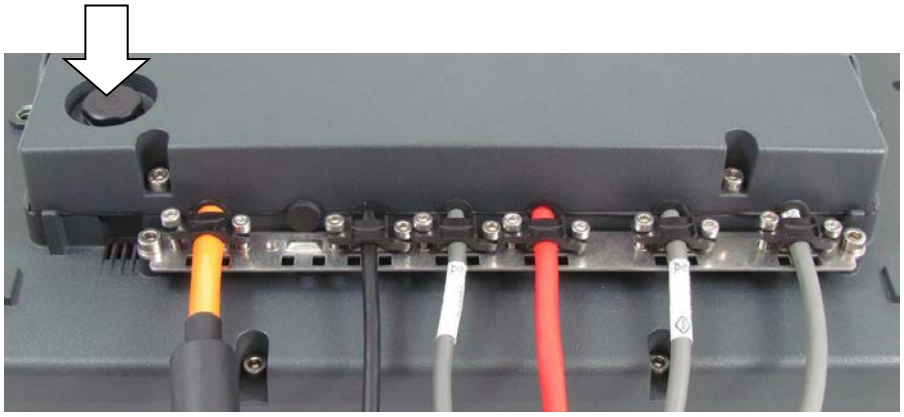


8.6.1. Pressure compensation element

The DLT-V72 cable cover has a pressure compensation element.

⇨ Do not modify or remove the pressure compensation element; doing so would make the device leak and the IP protection would no longer be ensured.

Fig. 8.10: Pressure compensation element - Do not modify or remove

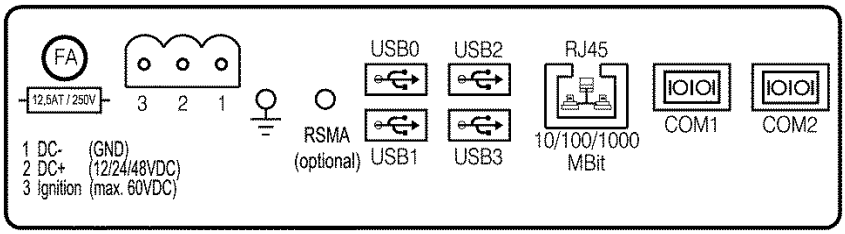


9. Connectors

9.1. Under the cable cover

Fig. 9.1: External connectors under the cable cover

Fig. 9.2: External connectors – detail view



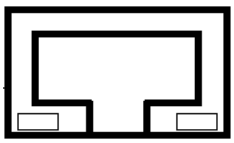
Pin assignment	
Power supply	12/24/48 VDC nominal
1 x RSMA (optional)	Remote Wi-Fi antenna
USB0, USB1, USB2, USB3	USB 2.0 interfaces (HI-SPEED™), bootable
RJ45	LAN Ethernet 10/100/1000 MBit/s
COM1, COM2	Serial interfaces

9.1.1. Network adapter (10/100/1000)

The DLT-V72 is equipped with a 10/100/1000 Mbit network adapter with 10/100/1000 Mbit per second. This adapter can be accessed via the bottom of the device and offers an RJ45 connection jack.
The RJ45 connection port has two integrated status LEDs and are assigned as follows:

Fig. 9.3: RJ45 network port

Left LED (green):
LED off: no connection
LED on: connection (link)



Right LED (orange):
LED off: no activity
LED flashing: activity

Problems with data transmission via LAN/Ethernet

If problems occur during data transmission over LAN/Ethernet (e.g. data is lost or not detected), the cause of these problems may be a cable which is too long. Depending on the cable layout and interference from the environment, it may be impossible to use the cable length of 100 m given in the specification (IEEE 802.3 standard). The solution here is the use of a shorter cable.

9.1.2. USB, Service-USB

USB connection, for example for mouse, keyboard, USB stick:

- 4 x USB 2.0 Host
- USB 2.0 Hi-Speed
- Fused at 1.0 A per channel
- ESD Level 4 protected (according to EN 61000-4-2)

9.1.3. COM1 and COM2

The DLT-V72 is equipped with two externally accessible serial interfaces COM1 and COM2.
Resources for the serial interfaces are pre-defined in the system architecture and automatically managed by the BIOS.

Technical Data	
COM1	Max. 115,200 Baud (16550A compatible, 16 byte FIFO), supports EIA-232-E on external 9-pin D-Sub connection ESD Level 4 protected (according to EN 61000-4-2)
COM2	Max. 115,200 Baud (16550A compatible, 16 byte FIFO), supports EIA-232-E on external 9-pin D-Sub connection ESD level 4 protected (according to EN 61000-4-2)

9.1.4. COM1 as a voltage source

The COM1 interface can optionally supply to externally connected equipment with +5 VDC.
The voltages are protected by internal fuses and may not exceed a continuous consumed current of 1 A at 5 V.
Depending on the connected devices, the maximum current consumption may be significantly lower.

Using the DLoG Config tool, you can select whether +5 VDC or RI is output on pin 9 of COM1.

9.2. Under the antenna cap

NOTICE: Physical damage

Improper opening of the antenna cap can impair the function of the entire DLT-V72 system and in particular the Wi-Fi functionality.

The antenna cap may only remain open for the duration of the service work.

No objects or liquids may enter the opened DLT-V72 during this.

Only when the antenna cap is properly closed again may operation be resumed; the protection class/category is only ensured again after doing so.

9.2.1. Service USB

There is a service USB interface under the antenna cap. It can be used for service purposes, e.g. to install software updates.

- USB 3.0 SuperSpeed
- Fused at 1.0 A per channel
- ESD Level 4 protected (according to EN 61000-4-2)

A plug connector which meets the specific shock and vibration requirements is used for the service USB interface.

⇨ Exercise special care when removing and plugging in USB connectors.

Fig. 9.4: Antenna cap opened

9.2.2. CFast slot

There is a CFast slot under the antenna cap.

- ⇨ Exercise special care when removing and re-inserting CFast cards.
- ⇨ Use only CFast cards that have been approved by Advantech-DLoG.

9.2.3. Antenna cap opening/closing

Opening

- ⇨ Loosen the two screws of the antenna cap using Torx screwdriver.
- ⇨ Carefully lift up the antenna cap.

Fig. 9.5: Antenna cap opened

Closing

- ⇨ Place the antenna cap back onto the DLT-V72.
- ⇨ The antenna cap seal must not be damaged; it must be seated correctly in the groove.
- ⇨ Tighten the two screws of the antenna cap again (1 Nm torque).

10. Integrated power supply, power supply cable

Fig. 10.1: DC Power supply cable with Phoenix Combicon, 3-pin

DLT-V72 is equipped with a galvanically separated, integrated DC power supply unit.

Power is connected to the back of the unit using a Phoenix Contact plug. There is no power switch.

WARNING

Electrical shock due to lack of disconnecting device.

The DLT-V72 does not have any externally accessible switching facility, with which the industrial PC can be quickly disconnected from the power supply in an emergency.
To be able to quickly disconnected the industrial PC from the power supply in emergency situations:

- ⇨ Install an easily accessible disconnecting device close to the industrial PC, e.g. a suitable load switch for low voltage.
- ⇨ Make sure that the disconnecting device disconnects all power supply lines.

Power supply	
DC power pack 12/24/48 VDC (wide-range power supply unit) 60 W / 80 W internal Type DC-16	12/24/48 VDC nominal Galvanically isolated Withstands bursts up to 2 kV Full output power of the 12/24/48 VDC power supply unit for 20 seconds each: For 6 V: 40 W For 9 V: 60 W Rising in linear fashion between the above
Voltage range	9 to 60 VDC
Bridged power failures	Typically 2 ms at 12 V Typically 10 ms at 24 V Typically 40 ms at 48 V
Maximum output power	60 W (+10 to +70 °C internal device temperature); or 80 W (-30 to +10 °C internal device temperature)
Nominal current	8.4 A
Connection to SELV circuit only	The SELV circuit is a secondary circuit that is designed and protected so that its voltages will not exceed a safe value both when operating correctly or if a single error occurs.

Power consumption	
DLT-V7210 (all model types: D, P, R, K)	Typically 25 W; Standby typically 1 W
DLT-V7212	Typically 30 W; Standby typically 1 W

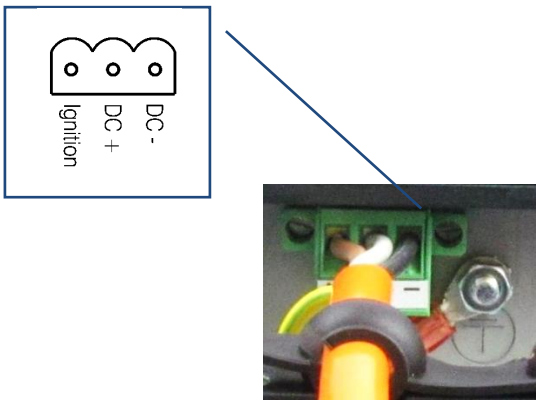
Power supply unit fuses		
Power supply unit	*Fuse type*	*Example*
DC-16	5 x 20 mm T 12,5 A H / 250 V	Schurter 0001.2515 Siba 179200.12,5 or similar produced by other manufacturers

The symbol for the fuse is **FA**. You will find the exact position on the sticker located on the connection plate of the DLT-V72.

10.1.1. DC voltage supply connection

Version: Phoenix Combicon, 3-pin.
External view:

Fig. 10.2: DC power supply connector with connector detail view



Explanation:
“Ignition on” means that a control signal can be routed to this connection (e.g., ignition of a vehicle), that matches the supply voltage level and is able to supply at least 1 W to the DLT-V72. The signal reference is DC-.

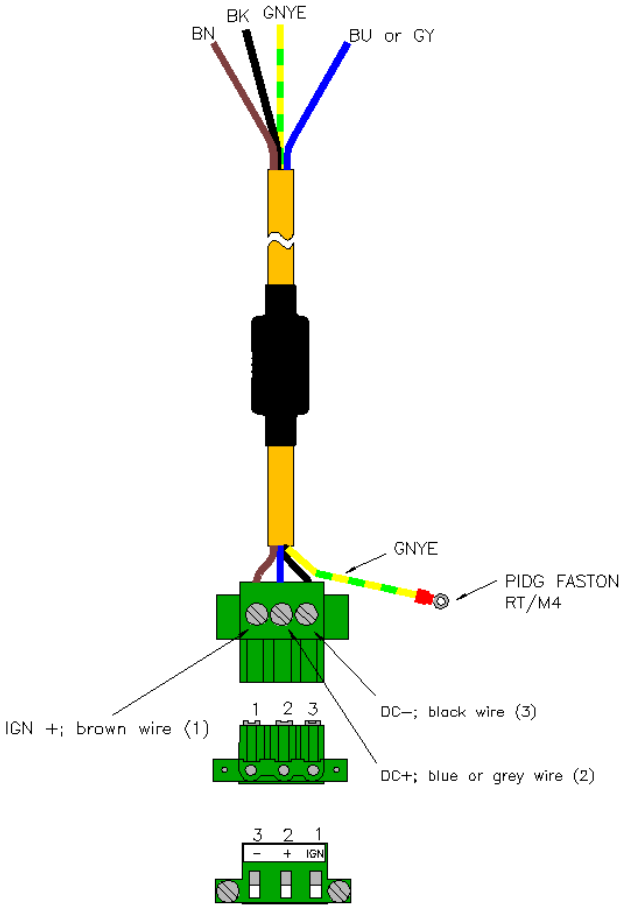
10.1.2. DC Power supply cable

WARNING

Electric shock, fire due to incorrect power supply cable.

⇨ Use only original Advantech-DLoG power supply cables; these meet the specific requirements for low-temperature flexibility, UV resistance, oil resistance, etc.

Fig. 10.3: DC connection cable assignment



11. Technical data

11.1. General

CPU, chipset, RAM, BIOS, CFast, SSD

CPU Chipset Cache	Intel® ATOM™ E3845 Quad Core 1.91 GHz Dual channel 1333 MHz memory bus speed 2 MB L2 cache, 22 nm
RAM	4 GB RAM DDR3L Technology
BIOS	AMI Aptio UEFI; ACPI 5.0 compliant
Real-time clock	Real-time clock with a power reserve of up to 5 years
CFast	4 GB and more CFast memory card

Housing, material, weight

Weight	
Respectively with CFast, mounted cable cover, strain relief rail and low profile antenna with Summit card:	
DLT-V7210P	Approx. 3.65 kg
DLT-V7210K	Approx. 3.70 kg
DLT-V7212P	Approx. 4.65 kg
Battery pack	Approx. 0.15 kg

Material	Rugged aluminum-cast housing ESD safe

Display and touchscreen

DLT-V7210	10,4“ XGA 1024 x 768 400 cd/m² Manually adjustable Brightness control
DLT-V7210K	10.1“ WXGA 1280 x 800 500 cd/m² Manually adjustable Brightness control
DLT-V7212	12,1“ XGA 1024 x 768 500 cd/m² Manually adjustable Brightness control

The LCD display of the DLT-V72 series fulfills the highest quality standards and was inspected for pixel defects. However, due to technological reasons pixel defects can occur.
This is not a malfunction; it is a part of the technical specifications.

ATTENTION: Physical damage

Protect the display of the DLT-V72 from the memory effect.

The display of the DLT-V72 has to be protected from the burning in of a motionless image. An image that has remained motionless for too long can cause irreversible damage to the display.

Recommendation:

⇨ Use a screensaver.

⇨ In the power management, set the display to turn off when there is no user input.

Resistive touchscreen

Technical data	
Type	5-wire analog resistive touchscreen
Construction	Film-Film-Glass (FFG) Fully laminated front
Surface	Hardness JIS-K-5400: 2H/3H at 750 g Chemically hardened glass
Resistance	Shock resistance IK08
Mechanical resistance	Tapping: > 1 million times with rubber test pen Swiping: > 100,000 times with polydactyl pen
Chemical resistance	Alcohols, Dilute Acids, Dilute Alkalis, Esters, Hydrocarbons, Ketones, Household Cleaning agents (according to DIN 42 115)

Projected-capacitive touchscreen (PCT)

Technical data	
Type	Projected-capacitive touchscreen
Construction	Glass film
Surface	Hardness JIS-K-5400: > 10 H at 750 g Chemical AR coated glass: DLT-V7210P and DLT-V7212P gloss value 85 at 60° DLT-V7210K gloss value 70 at 60° (according to ISO 2813, 7668; ASTM D 523, D 2457; DIN 67539)
Resistance	Shock resistance IK08
Mechanical properties	Thermally pre-stressed, acid-frosted float glass
Chemical resistance	Alcohols, Dilute Acids, Dilute Alkalis, Esters, Hydrocarbons, Ketones, Household Cleaning agents (according to DIN 42 115)

Graphic, touch and network controller

VGA controller	Intel® HD Graphics DX11 OpenGL 3.2 Full HW Acceleration for decode/encode of MPEG2 and H.264 Shared memory architecture Up to 24 bit color depth, depending on which LCD is used

Resistive touch controller	12-bit touch controller for touchscreens with USB interface
PCT touch controller	DLT-V7210: X21-Y28 channel PCT controller with USB interface and Advantech-DLoG-specific firmware DLT-V7212: X52-Y40 channel PCT controller with USB interface and Advantech-DLoG-specific firmware

Network controller	Intel® I210 Gigabit Ethernet 10/100/1000 MB/s
Network connection	RJ45 connector Integrated carrier Two integrated status LEDs

Internal speaker, sound

The DLT-V72 is equipped with an internal speaker as standard (2 W).
The system messages from the industrial PC are output via this speaker.
The internal speaker is configured in the audio settings for the operating system in question.

11.2. Environmental conditions

11.2.1. DLT-V72 without integrated UPS

Operating temperature	-30 to +50 °C Specification according to EN 60068-2-1/2
Storage temperature	-30 to +65 °C Specification according to EN 60068-2-1/2
Relative humidity	10% to 90% at 40 °C relative humidity Noncondensing Specification according to EN 60068-2-3
Mechanical vibration and shock resistance	Class 5M3 according to EN 60721-3-5 US Highway Truck according to MIL-STD 810F
IP protection class	IP66 for DLT-V7210 and DLT-V7212 IP65 for DLT-V7210K

11.2.2. DLT-V72 with integrated UPS (optional)

The environmental conditions are described in the following chapter:

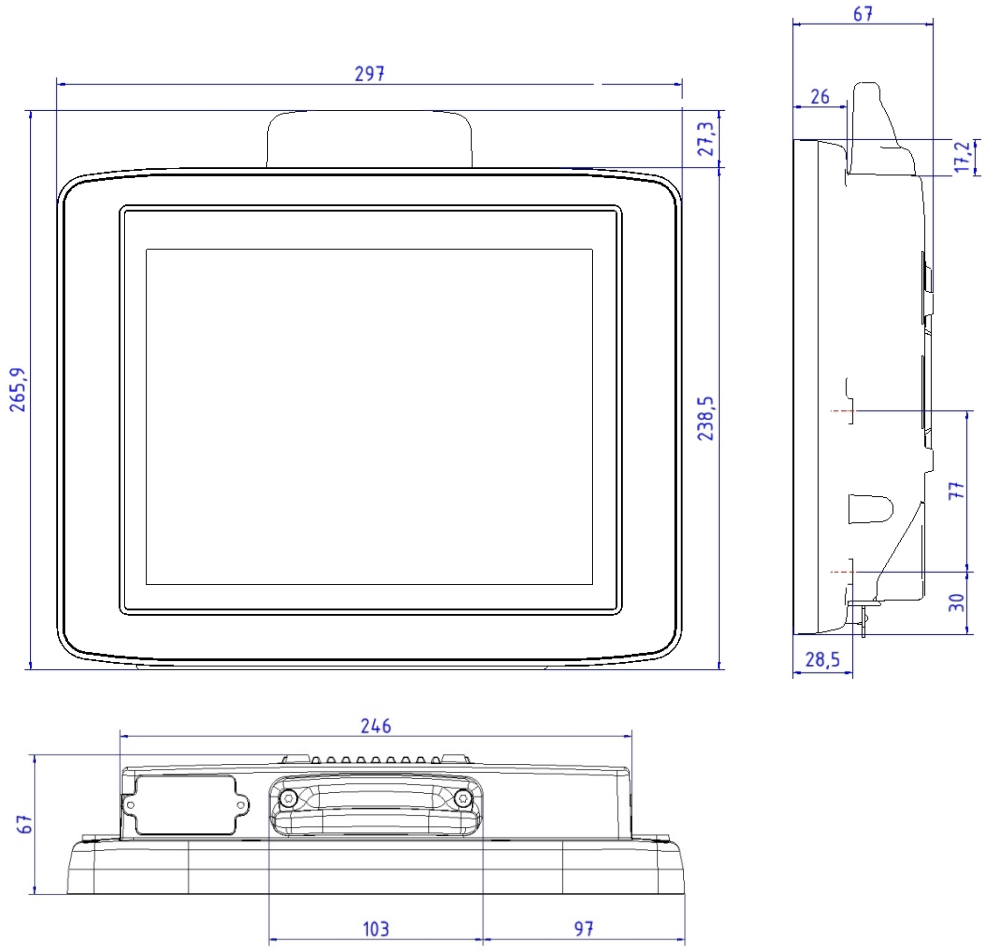
12.1 Integrated UPS (optional)

11.3. Device dimensions

11.3.1. DLT-V7210

Dimensions without add-ons (in mm)

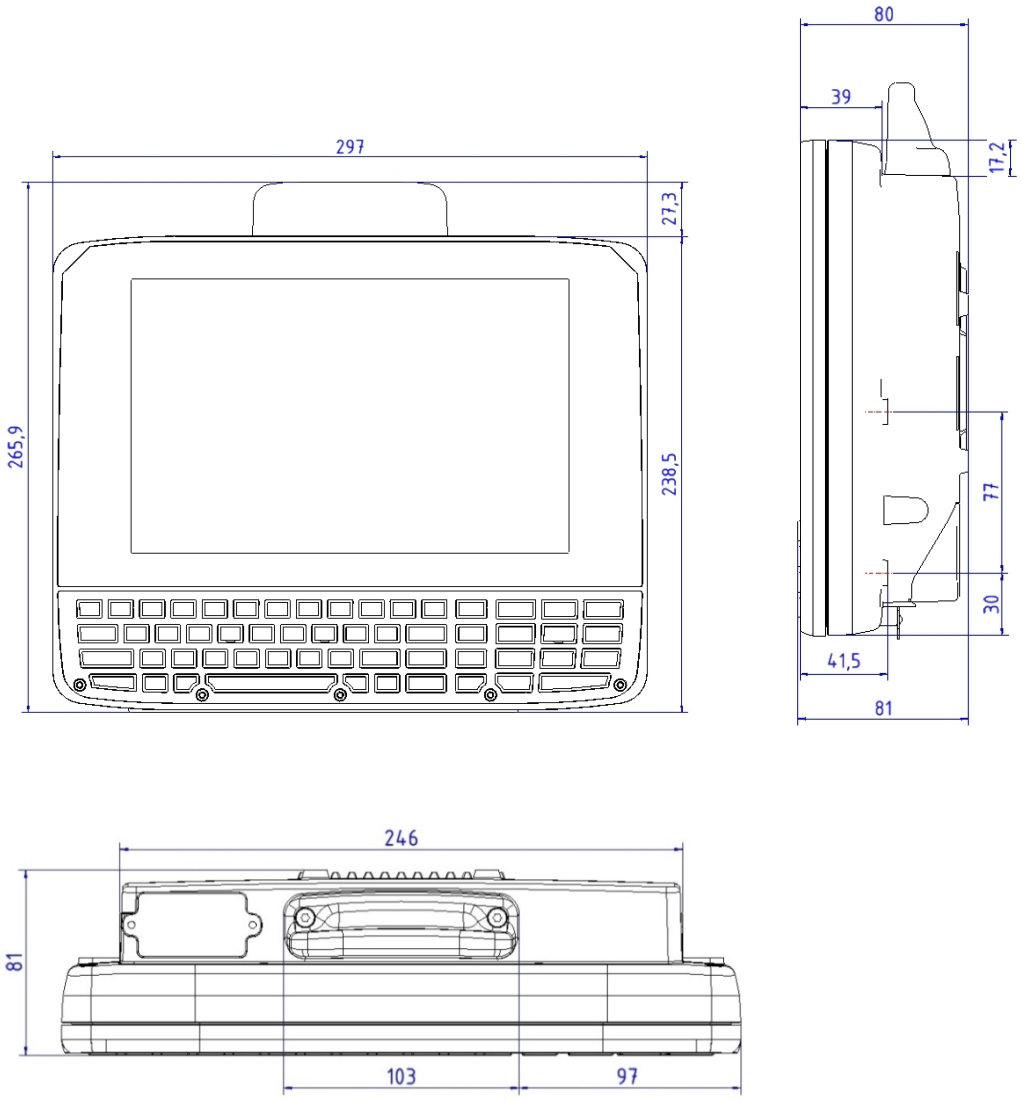
Fig. 11.1: Dimensions DLT-V7210



11.3.2. DLT-V7210K

Dimensions without add-ons (in mm)

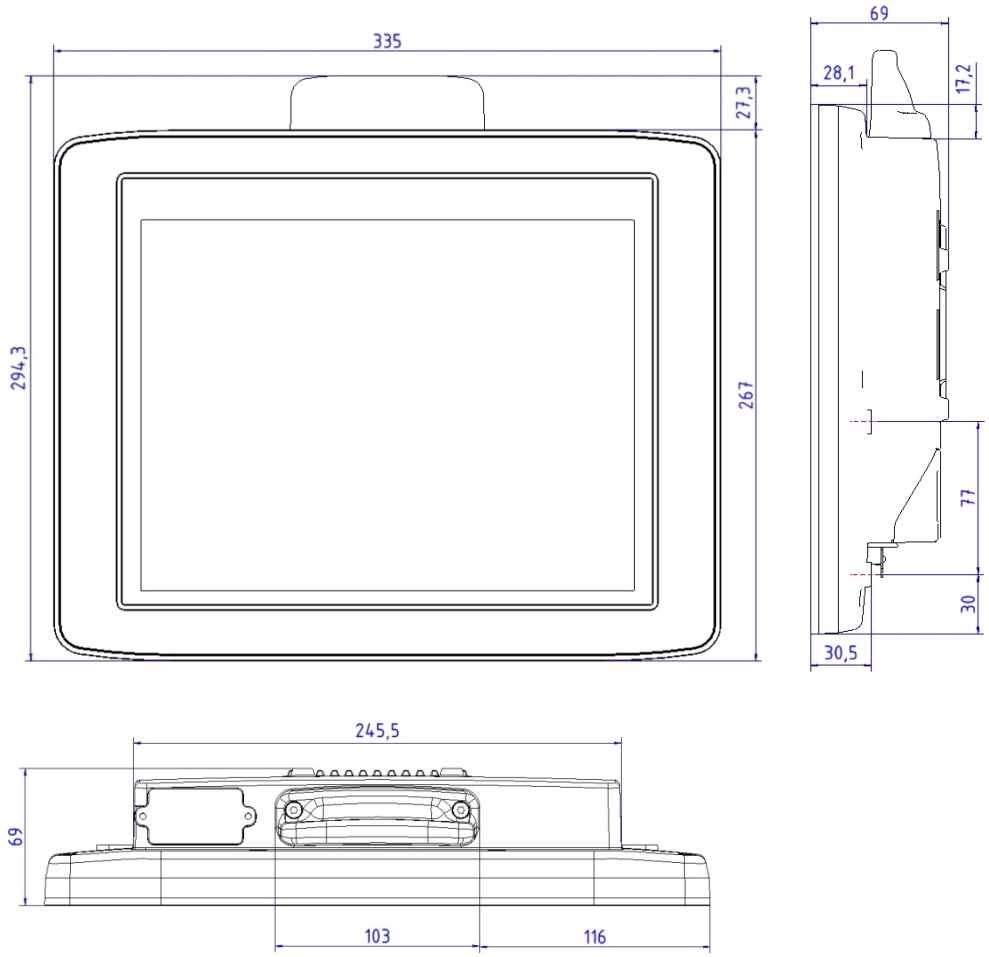
Fig. 11.2: Dimensions DLT-V7210K



11.3.3. DLT-V7212

Dimensions without add-ons (in mm)

Fig. 11.3: Dimensions DLT-V7212



11.4. Position of VESA drill holes

The back of the DLT-V72 has a VESA-compatible 75 x 75 mm mounting hole pattern. It is used to attach VESA-compatible mountings to mount the DLT-V72 at the deployment location.

ATTENTION: Physical damage

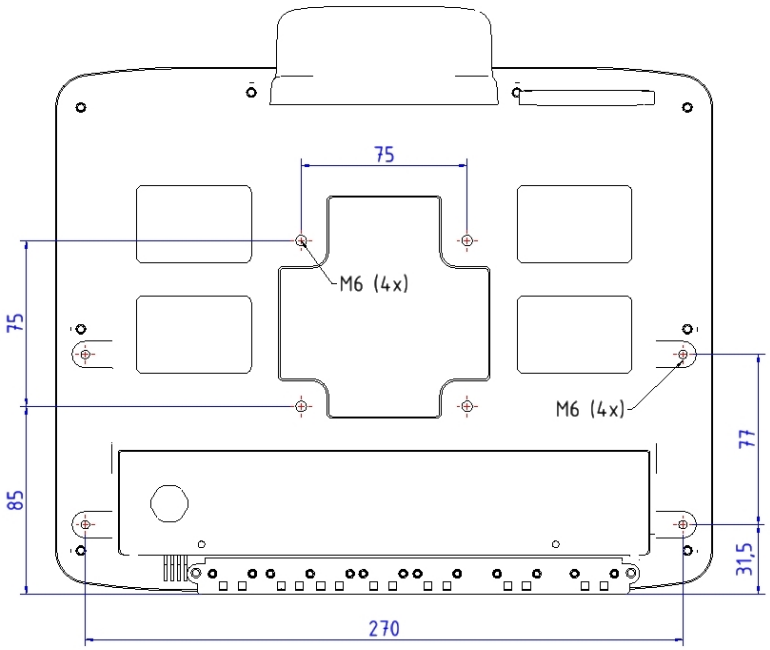
Only use mountings and mounting materials that have been tested and approved by ADLoG for the respective DLT-V72. Otherwise, any DLoG GmbH warranty for this device will be void.

11.4.1. DLT-V7210

Dimensions without add-ons (in mm):

Depth of thread: M6 x 6mm.

Fig. 11.4: Position VESA drill holes DLT-V7210

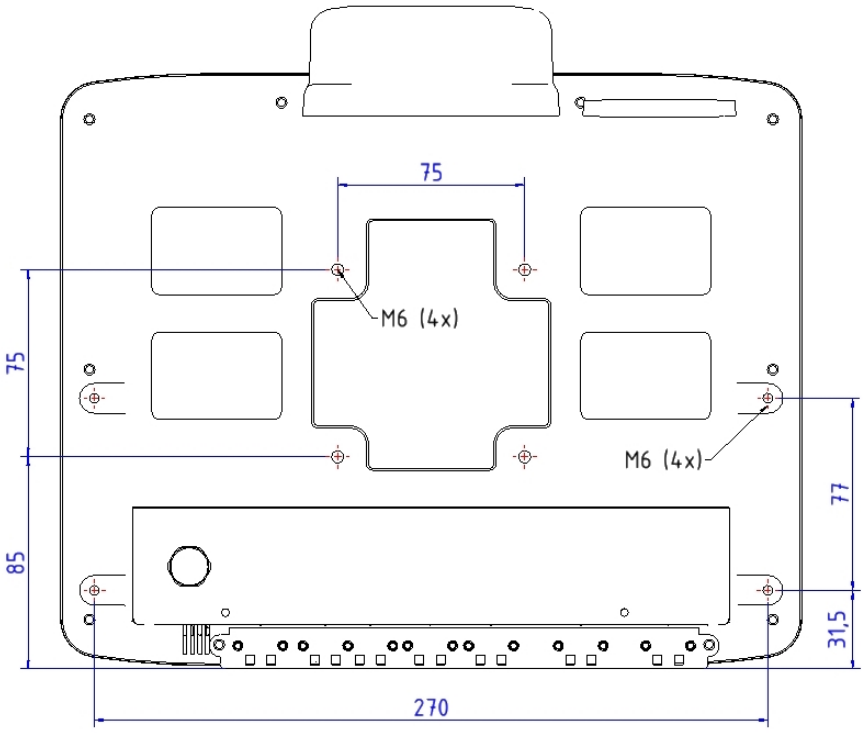


11.4.2. DLT-V7210K

Dimensions without add-ons (in mm):

Depth of thread: M6 x 6mm.

Fig. 11.5: Position VESA drill holes DLT-V7210K

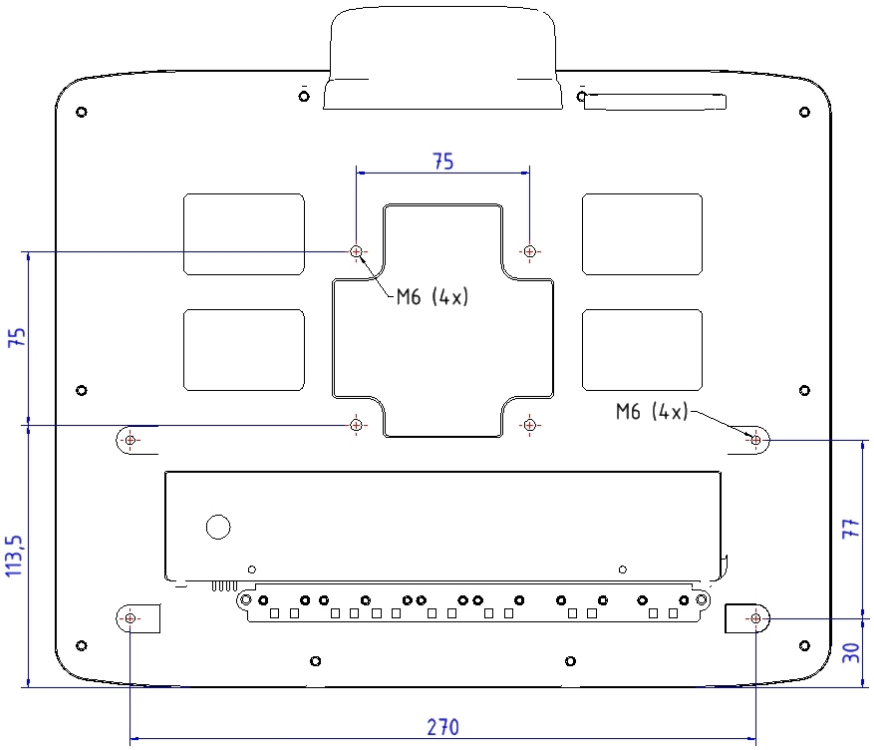


11.4.3. DLT-V7212

Dimensions without add-ons (in mm):

Depth of thread: M6 x 6mm.

Fig. 11.6: Position VESA drill holes DLT-V7212



12. Optional equipment

12.1. Integrated UPS (optional)

The DLT-V72 is optionally available with an integrated uninterrupted power supply (UPS).
The battery pack (lithium-ion technology) of the UPS is located in the battery pocket up top on the device.

Fig. 12.1: Battery pocket DLT-V72

WARNING

Personal injury due to short-circuit, fire, chemical burns, toxic substances.

DLT-V72 devices with integrated UPS contain lithium-ion battery packs. These can ignite if handled or stored improperly (risk of fire), cause chemical burns or release toxic substances.

- ⇨ Use care when handling lithium-ion battery packs.
- ⇨ Do not damage lithium-ion battery packs; do not drill through and do not crush or drop.
- ⇨ Do not allow water or other liquids to come into contact with the device (exercise particular caution with corrosive liquids).
- ⇨ Do not allow it to come into contact with fire.

12.1.1. Battery pack specifications

Two battery pack types are available:

Lithium-ion battery pack I	
Bridging time	The integrated UPS can bridge an interruption of the main supply for typically 20 minutes. Requirement: The battery pack is fully charged.
Operating temperature	-20 to +40 °C
Charging time	4 h (fully recharge a completely discharged battery pack)
Charging temperature	-10 to +30 °C (ambient temperature)
Storage temperature	-20 to +60 °C
Maximum output power	40 W
Battery voltage	7,2 V
Battery capacity	2500 mAh

Lithium-ion battery pack II	
Bridging time	The integrated UPS can bridge an interruption of the main supply for typically 20 minutes. Requirement: The battery pack is fully charged.
Operating temperature	-30 to +50 °C
Charging time	4 h (fully recharge a completely discharged battery pack).
Charging temperature	-10 to +50 °C (ambient temperature)
Storage temperature	-30 to +60 °C
Maximum output power	40 W
Battery voltage	7,2 V
Battery capacity	2000 mAh

12.1.2. Charging the battery pack

⇨ Connect the properly installed DLT-V72 to the main supply voltage.

ATTENTION:
The cable cover of the DLT-V72 must be screwed together properly.
The battery pocket must be screwed together properly.
The device must be fully closed.

WARNING

Electric shock when charging the battery pack.

⇨ Do not connect damaged battery packs to the DLT-V72; do not charge.

⇨ Battery packs become warm while charging; this is normal. However, if they become excessively hot, immediately disconnect the DLT-V72 from the power source.

⇨ Do not continue to use the DLT-V72 if you notice an unusual level of heat or an unusual smell during charging.

⇨ Provide for sufficient ventilation of the DLT-V72 during charging.

12.1.3. Replacing the battery pack

The battery pack of the DLT-V72 can be charged approx. 600 times.
It may only be replaced by an original battery pack from Advantech-DLoG.

WARNING

Personal injury due to short-circuit, fire, chemical burns, toxic substances.
No third-party battery packs permitted.

⇨ Use only original battery packs from Advantech-DLoG.

⇨ The battery packs must be authorized/approved for the DLT-V72.

⇨ Do not use battery packs from any other Advantech-DLoG devices; they are not compatible.

⇨ If battery packs from other manufacturers are inserted in the DLT-V72, the warranty provided by DLoG GmbH for this device will be rendered void.

Procedure for opening the battery cover

- ⇨ **IMPORTANT**: Switch off the DLT-V72.
- ⇨ Loosen the two screws of the battery cover using an Allen wrench.
- ⇨ Remove the battery cover.
- ⇨ Remove the battery pack.
- ⇨ Insert the new battery pack into the battery pocket as shown in the figure.
- ⇨ Make sure that the removal tab of the battery pack is inside the sealing surface.
- ⇨ Then reattach the battery cover (tightening torque 2 Nm).

Fig. 12.2: Inserting the battery pack in the battery pocket

12.2. Screen defroster (optional)

The following DLT-V72 devices are optionally available with a screen defroster.

- DLT-V7210D with resistive touchscreen
- DLT-V7212D with resistive touchscreen

Functional description

As soon as the internal temperature of the DLT-V72 device falls below 5°C, the screen defroster is automatically activated and heats the front of the device. The front of the device thus thaws more quickly when leaving cold stores, for example.

In terms of the ambient temperature, this means:

- The defroster is typically active at an ambient temperature of 0°C to -10°C.
  This depends on how quickly the ambient temperature changes or how quickly the DLT-V72 cools.
- Analogously, the screen defroster is typically deactivated again when the ambient temperature rises to +10°C to +20°C.

The screen defroster has a heat output of approx. 30 watts.

The screen defroster does not work when the DLT-V72 is running on battery power.

The screen defroster will switch off automatically if the internal device temperature is too high and cannot be switched on manually using the keys.

Manual operation

The screen defroster can be manually activated and deactivated using the following key combination:

 + **<SHIFT>**

Important: The temp LED indicates whether the screen defroster is active or inactive, not the touch LED above this key.

For more information about operating, see chapter *3.3.2 Keys and LEDs in detail*.

12.3. Integrated low profile Wi-Fi antenna (optional)

Fig. 12.3: Integrated low profile Wi-Fi antenna (optional)

Technical data	
Application	Wi-Fi IEEE 802.11 a/b/g/n Dual Band Diversity
Number of antennas	2
Type	Omnidirectional antenna
Directionality	Optimized for the DLT-V72 housing
Frequency range	Band 1: 2400 to 2485 MHz Band 2: 5150 to 5875 MHz
Antenna gain	Max. 5 dBi (without loss through the cable)
Impedance	50 Ω
Polarization	Vertical/Horizontal
Maximum transmitting power	100 mW / 20 dBm

12.4. External Wi-Fi antenna, remote (optional)

Fig. 12.4: Remote Wi-Fi antenna (optional)

Technical data	
Application	Wi-Fi IEEE 802.11 a/b/g/n dual-band
Mounting location	For detached (remote) installation, e.g. on the roof of the forklift
Number of antennas	1
Type	Omnidirectional antenna
Frequency range	Band 1: 2400 to 4900 MHz Band 2: 4900 to 6000 MHz
Antenna gain	Band 1: Max. 4 dBi (without loss through the cable) Band 2: Max. 6.5 dBi (without loss through the cable)
Impedance	50 Ω
Polarization	Vertical/Horizontal
Dimensions	Ø 86 x 43 mm (Ø 3.39” x 1.69”)
Weight	0.3 kg (0.66 lbs)
Connector labeling	N type or TNC N, jack, female, bottom RSMA plug for RSMA socket on the terminal
Scope of delivery	3 m antenna cable
Maximum transmitting power	100 mW / 20 dBm

12.5. Wi-Fi card (optional)

Technical data	
Wi-Fi PCIe MiniCard	Integrated in the device at the factory by Advantech-DLoG (internal PCIe MiniCard slot).
Driver	Generally, only drivers for Wi-Fi cards approved by Advantech-DLoG can be integrated into operating system images.
Maximum radiated power	100 mW EIRP

12.6. Micro Bluetooth adapter (optional)

The micro Bluetooth adapter permits the wireless connection between DLT-V72 industrial PCs and Bluetooth devices.

If this adapter was ordered, it is included separately in the delivery package and can be connected by the customer to a USB interface of the device.

Technical data	
Type	USB Bluetooth Adapter 4.0 and 3.0 + EDR Transmission rate up to 24 Mbit/s Supports BLM (Bluetooth® Low Energy)
General range	10 m
	Class 2 Micro Size
	Compatible with USB 2.0/1.1
	Supports A2DP stereo transmission
Compatible operating system	Windows 7 Windows 8 Windows 10 ADLoG Android™ Linux optional
	Plug & Play
Maximum transmitting power	2.5 mW

12.7. GPS receiver (optional)

With the optional GPS receiver the DLT-V72 can be used for GPS navigation.
The GPS receiver has an integrated antenna for position data of the Global Positioning System (GPS) and communicates with the DLT-V72 via USB interface. Installation information is included with the GPS receiver. We recommend using only a GPS receiver approved by Advantech-DLoG.

Fig. 12.5: GPS receiver (optional)

Properties:

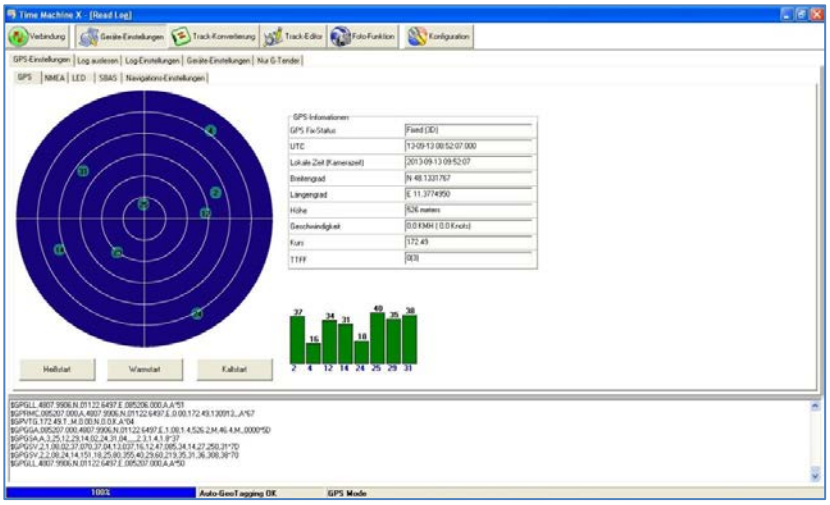
- Detects the signals of up to 50 satellites simultaneously
- Supports DGPS, WAAS, EGNOS and MSAS
- Supports NMEA 0183 protocols: GGA, GSA, GSV, RMC, VTG
- IPX6 protection class
- LED indicator for displaying the GPS status
- Cable length: 1.50 m
- Operating temperature: -40 up to +85 °C

Installation

The installation CD supplied with the GPS receiver includes installation files and a multi-lingual manual.

⇨ Please read the additional information in the manual about the GPS receiver.

Fig. 12.6: Ext. GPS receiver, display example during installation



12.8. Keyboards and keyboard mounts (optional)

Any USB keyboard can be connected to the DLT-V72.

Advantech-DLoG offers the following keyboards:

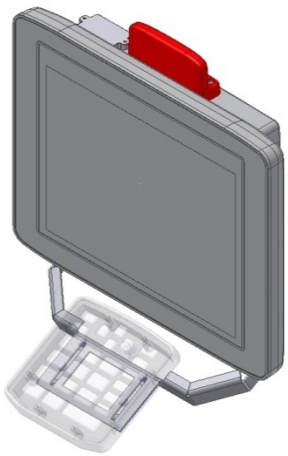
Fig. 12.7: SMALL keyboard

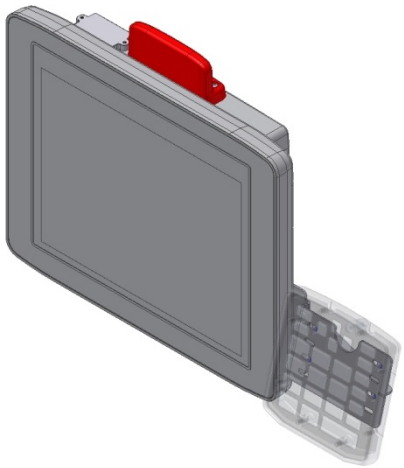
- SMALL keyboard
- Mountable
- Protection class IP65
- Keyboard layouts: German, English, French

Fig. 12.8: 24-key keypad

- 24-key keypad
- Mountable
- Protection class IP65

Fig. 12.9: Keyboard mounting examples





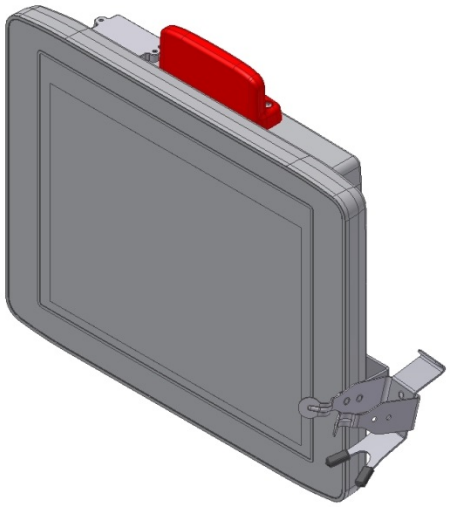
12.9. Scanner and scanner bracket (optional)

You can connect scanners to either the USB interface or the serial interface.
Please contact your Advantech-DLoG sales representative if needed.
If connected to COM1, the scanner can be powered through the interface with a voltage of 5 V.

⇨ Use only scanners that have been approved by Advantech-DLoG.

Optional scanner brackets are available for the DLT-V72.

Fig. 12.10: Example scanner bracket



12.10. Touch stylus

Advantech-DLoG offers some touch stylus pens (with associated mountings) for resistive and PCT touchscreens.

Please contact your Advantech-DLoG sales representative if needed.

⇨ Use only touch stylus that have been approved by Advantech-DLoG.

Fig. 12.11: Examples touch stylus

Touch stylus with mounting
for resistive touchscreen:

Touch stylus with mounting
for PCT touchscreen:

12.11. USB recovery stick (optional)

The optional Advantech-DLoG recovery stick allows images to be backed up and restored onto the DLT-V72 when necessary (backup & recovery).

Please contact your Advantech-DLoG sales representative if needed.

12.12. Protective film for touchscreen (optional)

An optional protective film is available for resistive touchscreens. This film protects the touchscreen during extreme use.

NOTICE: Physical damage

Do not attach the protective film to damaged or worn out touchscreens. Air bubbles can get trapped and cause malfunctions.

The ordered protective film is normally attached to the DLT-V72 touchscreen at the factory.
If the film must be attached by the customer or replaced:

- ⇨ Turn off the DLT-V72.
- ⇨ Use a neutral glass cleaner without ammonia or isopropyl alcohol applied to a lint-free cloth.
- ⇨ Wipe off the touchscreen with it.
- ⇨ Then use distilled water to remove any residual glass cleaner.

NOTICE: Physical damage

Never use any kind of chemical solvent, acidic or alkali solution.
Do not use any abrasive glass cleaner or cloths that could scratch the touchscreen.

- ⇨ Make sure that the surface of the touchscreen is free of dust and other particles.
- ⇨ Position the protective film tight at one corner of the viewing window.
  The adhesive side of the film must be facing downwards!
- ⇨ Carefully press on the foil.
- ⇨ Then using a wiper (wooden wiper) to push out any air bubbles to the corners.

12.13. Screen blanking (optional)

An optional screen blanking function is available for the DLT-V72 for use in vehicles.
The screen blanking functions darkens the DLT-V72 screen automatically as soon as the vehicle starts driving.

Please observe the mounting instructions supplied with the screen blanking option.

13. Maintenance

13.1. Do not repair or modify

Only the manufacturer and its authorized service centers may:

- Conduct repairs
- Carry out modifications
- Replace modules
- Open the device

The following measures may be performed by the **operator (by skilled personnel)**:

- Opening/closing the antenna cap to use the service USB interface and CFast slot.
- Opening/closing the battery pocket to replace the battery pack
- Replace the integrated keyboard of the DLT-V7210K

13.2. Replacing the integrated keyboard of the DLT-V7210K

If necessary, the integrated keyboard of the DLT-V7210K can be removed and replaced by a new keyboard (only by skilled personnel).

WARNING

Hazardous voltage, electric shock from contact with live parts.

To prevent an electric shock:

⇨ Switch off the DLT-V7210K before replacing the integrated keyboard.

⇨ Disconnect the DLT-V7210K from the power supply.

⇨ Disconnect connected accessories.

ATTENTION: Physical damage

Preventing damage to the DLT-V7210K.

⇨ Observe the applicable ESD and accident prevention regulations.

⇨ The work may only be performed in an ESD-protected, clean environment.

⇨ ESD protective mats must be installed on the floor and on the worktable.

⇨ The installer must also wear ESD shoes and clothing

13.2.1. Remove the integrated keyboard

Fig. 13.1: Unscrew the mounting screws of the integrated keyboard

⇨ Use a TX10 screwdriver to loosen the 5 mounting screws of the integrated keyboard.

⇨ Carefully remove the keyboard grid; it will be used again later.

⇨ Carefully remove the silicon keyboard mat; make sure you do not damage the circuit board or components on the circuit board.

13.2.2. Attach the integrated keyboard

Fig. 13.2: DLT-V7210K plus integrated keyboard components

Reuse:

– Keyboard grid, black

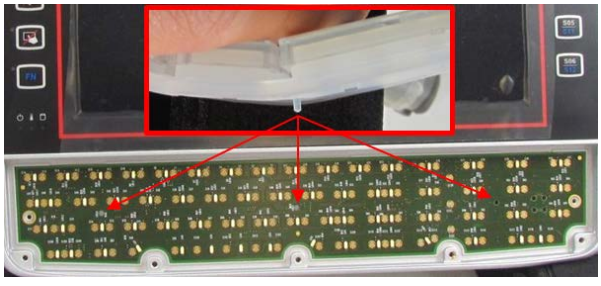
New, replacement parts:

– Silicon keyboard mat

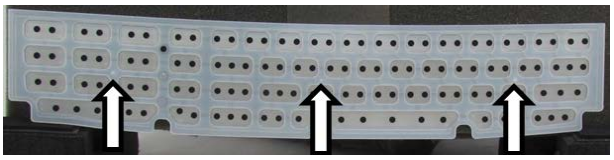
– 5 x screws ISO14580-m3x8 A2

Procedure

Fig. 13.3: Position at which the 3 nubs are inserted



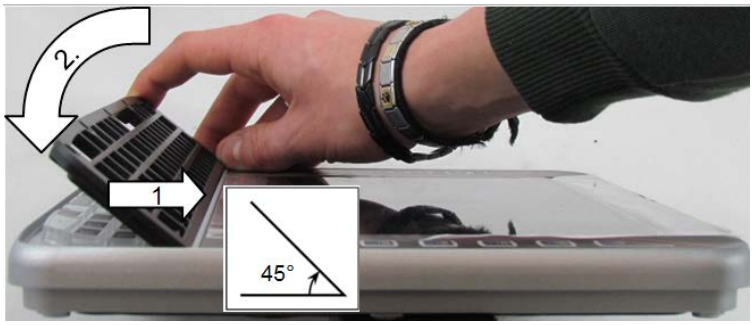
– Place the silicon keyboard mat on the circuit board



– Carefully press the 3 nubs on the back of the silicone keypad into the openings provided on the circuit board.

⇨ Place on the keyboard grid at a 45° angle, see *Fig. 13.4*.
⇨ Snap in keyboard grid lugs
⇨ Fold keyboard grid onto keyboard
⇨ Align keys
⇨ Press keyboard grid firmly

Fig. 13.4: Attach keyboard grid



⇨ Use a TX10 screwdriver to tighten the 5 mounting screws of the integrated keyboard.
⇨ Tightening torque: Maximum 2 Nm.

13.3. Regular checks and maintenance of the complete system

To ensure the stability and security of the DLT-V72 complete system:

- ⇨ Regularly check whether the DLT-V72 is firmly seated in the associated holder (RAM mount, mounting bracket) and the mounting screws are not loose.
- ⇨ Also check whether the bracket is secured stably to the respective deployment location. This is particularly important if the DLT-V72 is installed on a vehicle.
- ⇨ Check whether all connected cables are secured and the cable cover shuts tightly.

WARNING

Risk of accident due to unstable attachment of the DLT-V72 to vehicles.

If the attachment of the DLT-V72 becomes loose and breaks during driving, this can lead to severe accidents.

- ⇨ Perform the attachment checks described above at regular intervals.

13.4. Replacing the battery pack

See section *12.1 Integrated UPS (optional)*

13.5. Cleaning the DLT-V72

WARNING

Hazardous voltage, electric shock from contact with live parts when cleaning the device.

To prevent an electric shock while cleaning the device:

- ⇨ Switch off the DLT-V72 before cleaning.
- ⇨ Disconnect from the power supply.
- ⇨ Disconnect connected accessories.

NOTICE: Physical damage

Cleaning the touchscreen and housing:

- ⇨ Never use chemical solvents to clean the touchscreen.
- ⇨ Do not use acidic or alkaline solutions.
- ⇨ Do not use cleaning agents that contain ammonia or sulfur (tile cleaners, for example, contain ammonia).
- ⇨ Do not use any abrasive glass cleaner or cloths that could scratch the touchscreen.

Cleaning the housing

- ⇨ Ensure that the DLT-V72 is switched off and currentless.
- ⇨ Clean the housing with a slightly dampened cloth.
- ⇨ Do not use compressed air, a high-pressure cleaner or vacuum cleaner, as this can damage the surface.
  Using a high-pressure cleaner poses the additional risk of water entering the device and damaging the electronics or display.

Cleaning the touchscreen

- ⇨ Device with PCT touchscreen: Switch off the device completely.
- ⇨ Device with resistive touchscreen: Deactivate the touchscreen: 
- ⇨ Use a neutral glass cleaner without ammonia or isopropyl alcohol applied to a lint-free cloth.
  ATTENTION: Do not apply cleaning agent to the touchscreen; apply it to the cleaning cloth
- ⇨ Then wipe off the touchscreen with it.

14. Malfunctions and troubleshooting

Please contact DLoG GmbH if the DLT-V72 malfunctions.

Error	Possible cause(s)	Remedy
Battery pack run time is significantly shorter than specified.	The device may possibly not be in the temperature range which is necessary for charging the battery pack.	Check the temperature specifications for the device and surroundings.
	Maximum number of charging cycles of the battery pack has been reached.	If temperature causes can be ruled out, the battery pack has possibly reached the maximum number of charging cycles. Replace the battery pack. Use only original battery pack from Advantech-DLoG.
No UPS functionality although battery pack is plugged in.	Battery pack is discharged or deep discharged.	Charge the battery pack properly. **Observe**: If the battery pack is deep discharged, the charging time can increase by a multiple.
Nothing is shown on the display, Power LED does not light up.	There is no voltage present on the device.	Check the power switch, plug connection, power supply cable and fuse.
	Ignition signal missing.	Check ignition cable and signal
Nothing is shown on the display, Power LED active.	Backlight is switched off.	Press backlight key ("light bulb" symbol).
	Brightness to low	Increase display brightness with key
Nothing is shown on the display, Temp LED active.	Operating temperature limits exceeded/undershot .	Wait until the device has cooled down resp. warmed up.
Touchscreen reacts imprecisely. Device cannot be operated by touch input	Touchscreen is switched off.	Press touchscreen on/off.
	Touch driver error	Reinstall the touch driver or change settings
	Touchscreen is not calibrated correctly.	The touchscreens of the DLT-V72 is already calibrated at the factory and therefore and does usually not need to be recalibrated. However, the operating systems MS Windows 7 Pro, Windows 8.1 Industry and WE8S do permit recalibration of the touchscreen via software (Menu **Control Panel -> Tablet PC Settings**). This resets the sensitivity of the touchscreen to an operating system default setting, which can result in poorer detection of taps on the screen.

		You can use **Reset** to reset the software recalibration.
Operating system does not start	External boot media lock	Remove all external storage
	Operating system damage	Operating system or image must be reinstalled
Software keyboard not functioning	License missing or invalid	Enter the correct software license
No Wi-Fi connection	Connection deactivated	Activate connection in the **Control Panel**
	AP access problem	List ACL and check access rights to AP
	Invalid network settings	Check Wi-Fi, authorization parameters, network and protocol settings
	Signal strength too weak	Check signal strength and quality in software; if necessary, the network must be enlarged
The system looses settings after a restart	Write protection activated	Deactivate write protection or authorize changes in operating system
	Operating system damage	Operating system or image must be reinstalled
No network connection	Connection deactivated	Activate connection in the Control Panel
	Invalid network settings	Check network and protocol settings
	Network problems	Check status LEDs on RJ45 connection socket, plug connection and cable

15. Reasonably foreseeable misuse

Observe the intended use

The DLT-V72 industrial PCs are data communication terminals for use in commercial environments (e.g. logistics, warehousing, manufacturing).

- ⇨ Do not use in the EX zone (potentially explosive), on ships and rail vehicles.
- ⇨ Do not use in life-supporting systems or safety-critical facilities.

Permissible environmental conditions

- ⇨ Observe the permissible environmental conditions.

16. Guidelines and certificates

16.1. EC Europe

EMC guidelines – Shielded components

All components connected to the DLT-V72, as well as cable connections must also meet the legal EMC requirements for compliance with the EMC legislation. For this reason, screened bus, LAN cables and connectors must be used.

Declaration of Conformity

1/1

Digital Logistics & Fleet Management

EC Declaration of Conformity

Document-No.: V72-003
Day/Month/Year: 18.01.2017

We — **DLoG Gesellschaft für elektronische Datentechnik mbH**
Industriestr. 15, D-82110 Germering
Germany

hereby declare in our sole responsibility, that the product: **Industrial Computer with Radio modules**

Type: **DLT-V72 series**

conforms with the essential requirements and other relevant provisions of the following directives and complies with the following standards applied:

RED (form. R&TTE) Directive 2014/53/EU
EN 300 328 V1.9.1
EN 301 893 V1.8.1

EMC Directive 2014/30/EU
EN 55022 : 2010
EN 55024 : 2010
EN 301 489-1:V1.9.2 (2011-12)
EN 301 489-17 V2.2.1
EN 61000-3-2 :2014
EN 61000-3-3: 2013
EN 61000-6-2 :2005-08
EN 61000-6-4:2007+A1:2011

Low-voltage Directive 2014/35/EU
EN 60950-1:2006 + A1:2010 + A2:2013 +A11:2009 + A12:2011

RoHS Directive 2011/65/EU
EN 50581:2012

The technical documentation is kept at the above mentioned address open for inspection.

DLoG Gesellschaft f. elektr. Datentechnik mbH
Industriestrasse 15 • D-82110 Germering
Tel. +49 (0)89 4 111 91 - 0 • Fax: - 900

Germering, 18.01.2017
Place, Date

i.A. Luan Berisha – CE Coordinator

CE

DLoG GmbH · Industriestr. 15 · D-82110 Germering · Telefon: +49 (0) 89/411191-0 · Telefax: +49 (0) 89/411191-900 · E-Mail: info@advantech-dlog.com · advantech-dlog.com

16.2. USA/CANADA

FCC Part 15 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 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.

CAUTION

Radio frequency exposure.

In order to comply with the FCC requirements regarding radio frequency exposure from vehicle-mounted transmission devices:

The antenna has to be kept at least 20 cm away from people.

Any change or modification which is not expressly approved in the corresponding pages can lead to the withdrawal of the operating license for this device.

FCC IDs:

PE15N

FCC ID: TWG-SDCPE15N
IC ID: 6616A-SDCPE15N

WPEA-252NI

FCC ID: RYK- WPEA252NI
IC ID: 6158A-WPEA252NI

ICES Kanada

Deutsch [German]:	DLT-V72 Industrie-PCs sind digitale Geräte der Klasse A und entsprechen der Kanadischen ICES-003 Norm.
English:	This Class A digital apparatus complies with Canadian ICES-003.
Français [French]:	Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

16.3. China

Numerous DLT-V72 models are approved for the Chinese market and carry the appropriate labeling on the device.

16.4. Taiwan

Numerous DLT-V72 models are approved for the Taiwanese market and carry the appropriate labeling on the device.

16.5. MIC Japan (previously TELEC)

In several of the DLT-V72 series, the PE15N PCI Express Mini Card from Laird is used. Laird has implemented the following MIC certifications for this:

- Article 2 Item 19, Category WW (2.4 GHz Channels 1 - 13)
- Article 2 Item 19-2, Category GZ (2.4 GHz Chanel 14)
- Article 2 Item 19-2, Category XW (5150-5250 W52 & 5250-5350 W53)
- Article 2 Item 19-2, Category YW (5470-5725 W56)

Source:
http://www.lairdtech.com/Products/Embedded-Wireless-Solutions/Summit-Wi-Fi-Radio-Modules/Device-Certification-Guide/#MIC

17. End-of-life device disposal

DLT-V72 devices and lithium-ion batteries are recyclable; they may not be disposed of with general/domestic waste. They must be disposed of properly in accordance with local regulations. Please contact the responsible authorities in your country/region to find out about the applicable regulations, if necessary.

18. Technical customer support

Please contact your distributor, your sales representative or the Advantech-DLoG customer service to receive technical support. Please have the following information available:

- Product name
- Serial number
- Description of the connected accessory
- Description of the installed software (operating system, version, application, etc.)
- General description of the problem
- The wording of all error messages

Advantech-DLoG Service & Support

Find out about our worldwide and comprehensive service offering:
www.advantech-dlog.com/en/service-and-support/
Email: helpdesk@advantech-dlog.com
Phone: +49 (0)89 / 41 11 91 999

Manufacturer address

Advantech-DLoG
DLoG GmbH
Industriestraße 15
D-82110 Germering, Germany

19. Return shipment form

Return shipment form (please fill in once per return shipment):

Company	
Street	
Zip code, town	
Contact	
Phone number /E-Mail	

Type(s) of unit(s) returned:

Serial number(s) of the unit(s) returned:

[ ] The units have not been returned, as they are currently being used. However, the following parts are missing:

[ ] Unit was already damaged on delivery (please enclose a copy of the delivery note)

[ ] Delivery was incomplete

Missing parts:

[ ] The following error occurs when operating the unit:

[ ] Separate error report is enclosed

20. List of figures