



User Manual - SDoT Server V3B/V3B-2

Dokument: V-220128-MANoo

Projekt: User Manual - SDoT Server V3B/V3B-2

Datum: 12/05/2023

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1 Company data

1.1 Company data

iesy GmbH

Darmcher Grund 22

58540 Meinerzhagen

Germany

1.2 Brief description iesy

iesy is a system house for embedded computing. With a passion for technology, the South Westphalian company has been developing, manufacturing and distributing electronic systems and their components for industrial applications since 1966.

With a well-coordinated team in the areas of software and hardware development, material procurement, manufacturing and device testing, iesy is an ideal OEM and outsourcing partner for its customers for the development, series production and maintenance of individual electronic products. Under the motto "That's easy. That's iesy.", customer-specific solutions in the field of embedded computer technology are created at the Meinerzhagen site.

2 Safety Informations

2.1 Intentional usage

To ensure safe operation, the system may only be operated in accordance with the information in these operating instructions. During use, the legal and safety regulations required for the respective application must also be observed. This also applies analogously to the use of accessories. Additional safety precautions must be taken for systems that could cause major damage, loss of data or even personal injury due to a malfunction. In the event of a malfunction, these precautions will ensure a safe operating condition.

Operating instructions and in particular the safety instructions have been read and understood. The system may only be installed by trained and qualified personnel.

2.2 General risks by ignoring the safety Informations

The SDoT server V3B/V3B-2 is state-of-the-art and safe to operate. The system may present residual risks if it is used and operated improperly by untrained personnel. Any person responsible for installing, commissioning, maintaining, or repairing the system must have read and understood the operating instructions and, in particular, the safety notes. The system may only be installed by trained and qualified personnel.

2.3 Safety Instructions

- ▶ Ground the unit properly
- ▶ do not use damaged power cords, accessories or peripherals
- ▶ before cleaning or servicing, disconnect the unit from the power supply by disconnecting both power cables. Disconnect all connections, the potential equalization at the front should only be disconnected if necessary and as a last step
- ▶ do not place or drop any objects on the unit. Do not insert foreign objects into the appliance

2.4 External Overcurrent Protection

Provide an external overcurrent protection device for the unit. The highest rated value of this device is 16A.

2.5 Battery Change (optional)

The SDoT servers V3B/V3B-2 have a battery compartment on the back of the 19" housing. It is only necessary to replace the battery once an optional HSM module has been installed.

The administrator can find information on the status of the external battery in the software GUI under **Monitoring » Status information » HSM: External Battery** (refer to user manual of the SDoT Product).

1. unscrew the cover of the battery compartment with a coin
2. replace the battery:
 - ▶ AA 3.6 V
 - ▶ up to 2700 mAh
 - ▶ recommended: EVE ER14505V or Saft LS14500
3. close the battery compartment again with the cover unscrewed

Observe the general notes on the disposal of rechargeable batteries and batteries of the country in which the SDoT Systems V3B/V3B-2 are used.

When disposing of batteries, comply with local regulations and laws.

2.6 Operating Installation Side'

- ▶ Operating temperature: 0°C ...+45°C
- ▶ make sure that the fans and ventilation openings are not covered up
- ▶ the permissible relative humidity at 45°C is 95 % (non-condensing) must be observed
- ▶ the device must be protected from direct sunlight

2.7 Service and Cleaning

Clean the housing with a soft and slightly damp cloth. Never use solvents, as these could damage the labelling or the housing. When cleaning, make sure that no liquid gets into the module or onto the connections.

The fans and the redundant power supply provide interfaces that can be used for monitoring the operating status. In the event of a fault, the corresponding component must be replaced.

2.8 Product Liability

In the following cases, the intended safety of the device may be impaired. Liability for the device function then passes to the operator:

- ▶ the device is not used according to the operating instructions
- ▶ the device is used outside the described field of application (intended use)
- ▶ unauthorized changes are made to the device by the operator

2.9 Modifications and Structural Changes

The system may not be modified in terms of design or safety without our express consent. Any modification excludes liability on our part for any resulting damage. In particular, any repairs, soldering work on the circuit boards (replacement of components) are prohibited. When replacing entire assemblies, only original parts are to be used. The system was delivered from the factory with a fixed hardware configuration. Modifications are only permitted within the scope of the possibilities documented in the manuals.

2.10 Qualified Personnel

This appliance may only be used by qualified personnel and only in accordance with the technical data in connection with the safety rules and regulations listed below. Qualified personnel are persons who are familiar with the installation, assembly, commissioning and operation of the product and have the qualifications appropriate to their job. This includes persons who meet at least one of the following three requirements:

- ▶ the persons are familiar with the safety concepts of IT / automation technology and are familiar with them as project personnel
- ▶ the persons are operators of the IT / automation systems and have been instructed in the use of the systems and IT systems. They are familiar with the operation of the modules and technologies described in this documentation

- ▶ the persons are commissioning engineers or assigned for service and have completed training that qualifies them to repair IT / automation systems. They are also authorised to commission, earth and label circuits and equipment in accordance with safety engineering standards. During use, the legal and safety regulations required for the respective application must also be observed. This also applies to the use of accessories. Maintenance and repair work on the open, live unit may only be carried out by a trained person who is aware of the danger involved.

2.11 Symbols and Meanings

Symbol: 

Meaning: **Connection for grounding**

the connection must be at protective earth potential.

Symbol: 

Meaning: **CE-Marking**

With the CE marking, the manufacturer guarantees that his product complies with the requirements of the relevant EC directives.

Symbol: 

Meaning: **ESD (Electrostatically Sensitive Devices)**

To ensure protection of sensitive electronic components against electrostatic discharge, precautions must be taken, such as suitable work clothing, dissipative floor coverings, a grounding strap, etc.

Symbol: 

Meaning: **Federal Communications Commission**

The device has been subjected to expert certification by a recognized test laboratory. With the FCC marking, the manufacturer guarantees that its product complies with the requirements of the relevant FCC guidelines.

Symbol: 

Meaning: **Warning: Risk of electric shock**

Danger from touching electrically conductive components by direct and indirect contact.

Symbol: 

Meaning: **disconnect main plug(s) – power input**

before opening the device, the main plug(s) must be disconnected, the device must be free of voltage. **Note:** The system may only be opened by trained specialists.

3 Assembly SDoT-Server V3B/V3B-2

The SDoT Server V3B/V3B-2 is a 19" unit for use in server racks. Suspension bolts on the rear and eyelets on the front are used for mounting in 19" racks. Alternatively, mounting rails can be used to allow the unit to be pulled out of an IT cabinet for operation.

The **SDoT Server V3B/V3B-2 10G SC** variant shown below has a smartcard slot and two 10 Gbit network ports (N5, N6).



Variant **SDoT Server V3B/V3B-2 10G** has two 10 Gbit network ports and no smartcard slot.



Variant **SDoT Server V3B/V3B-2 SC** has a smartcard slot and no 10 Gbit network ports.



Variant **SDoT Server V3B/V3B-2 HSM** has no smartcard slot and no 10 Gbit network ports. There is a battery compartment on the back, which contains a battery as an emergency power source for this variant.



3.1 Model versions

Numbering	Description Label	Nomination
1	SDoT Server V3B 10G SR SC	SDoT Server V3B Multimode 10Gbit
2	SDoT Server V3B 10G LR SC	SDoT Server V3B Singlemode 10Gbit
3	SDoT Server V3B HSM SC	SDoT Server V3B N-HSM
4	SDoT Server V3B HSM SC	SDoT Server V3B S-HSM
5	SDoT Server V3B HSM SN SR	SDoT Server V3B S-HSM Multimode 2xSNeC
6	SDoT Server V3B HSM SN SR	SDoT Server V3B S-HSM Multimode 1xSNeC
7	SDoT Server V3B 10G SC FW	SDoT Server V3B Multimode 10Gbit ICS
8	SDoT Server V3B-2 10G SR SC	SDoT Server V3B-2 Multimode 10Gbit
9	SDoT Server V3B-2 10G LR SC	SDoT Server V3B-2 Singlemode 10Gbit
10	SDoT Server V3B-2 HSM SC	SDoT Server V3B-2 N-HSM
11	SDoT Server V3B-2 HSM SC	SDoT Server V3B-2 S-HSM
12	SDoT Server V3B-2 HSM SN SR	SDoT Server V3B-2 S-HSM Multimode 2xSNeC
13	SDoT Server V3B-2 10G SC FW	SDoT Server V3B-2 Multimode 10Gbit ICS
14	SDoT Server V3B-2 HSM SN SR	SDoT Server V3B-2 S-HSM Multimode 1xSNeC

4 Connection SDoT-Server V3B/V3B-2

The AC power supply should be located close to the device and easily accessible, as this serves as a disconnecting device for the device. Alternatively, electronic components can be installed to ensure that the system is de-energised when actuated.



Connect the two marked IEC plugs - redundant power supply unit

If a power unit is defective, you can replace the power unit.

1. switch off the SDoT Server V3B/V3B-2 and remove it from the power supply
2. pull the plug out of the defective power supply unit
3. press the black locking lever in the direction of the bow handle
4. while holding the lever, pull the power supply out of the housing by the metal bracket
5. check that the replacement power supply corresponds to the required type
 - ▶ Manufacturer: 3Y Power Technology
 - ▶ Model: YM-2301E
 - ▶ Power: 300 W
 - ▶ Input: 0-240 V AC, 3.0-5.0 A, 50-60 Hz
 - ▶ Output: +12 V DC, 24 A; Standby: +5 V, 3 A
6. hold the new power supply with the label facing up and the metal bracket facing back
7. slide the new power supply into the free slot until the power supply is fully engaged
8. plug the connector back into the power supply

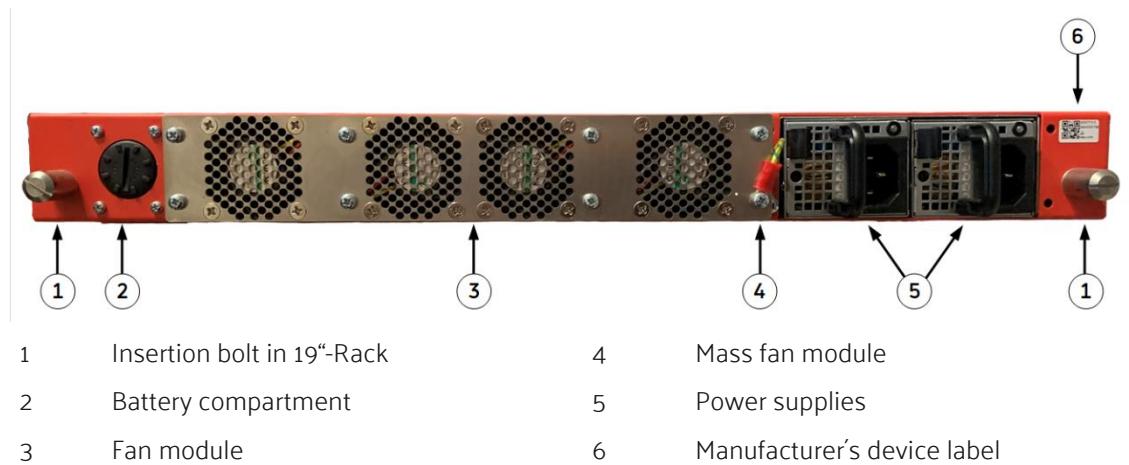


4.1 Server Front Side

- ▶ H1 – Insertion compartment for the audit removable hard drive
- ▶ N1 – Network connection to HIGH interface, up to 1 Gbit
- ▶ N2 – Network connection to LOW interface, up to 1 Gbit
- ▶ N3 – Mains connection to HEARTBEAT interface
- ▶ N4 – Network connection to ADMIN interface
- ▶ N5 – Network connection to HIGH interface, up to 10 Gbit
- ▶ N6 – Network connection to LOW interface, up to 10 Gbit
- ▶ P1 - On/off pressure switch
- ▶ U1 - USB1 for keyboard
- ▶ U2 - USB1 for keyboard
- ▶ V1 – DisplayPort for display, possibly via adapter
- ▶ R1 – Reset switch, to be operated with paper clip
- ▶ S1 – RS232 connection
- ▶ T1 – LC Touch display

4.2 Server Rear Side

The rear of the SDoT Server V3B/V3B-2 has a battery compartment and two power supply units, the slide-in bolts and the openings for the fan module.



4.3 Main Power Supply

- ▶ 230 V-AC Input voltage, wide range input 90 ... 264 V-AC
- ▶ connector plug: 2 x cold appliance connector plug, incl. cable 2m, with lock
- ▶ the power supply for all onboard components is generated according to the required power data on the mainboard.

4.4 Ground Connection

Grounding/potential equalization of the device is mandatory. For this purpose, a grounding screw is provided on the front and marked with the grounding symbol



4.5 Interface USB3.0 – U1 & U2

For maintenance purposes only. These interfaces can be used to connect devices such as keyboard, mouse, printer or data storage devices such as USB sticks.

4.6 Network Interface (Ethernet & Mini Gigabit Interface) - N1 to N6

Six network interfaces (N1 - N6) are available. Of these, two network interfaces (N5 - N6) are optional.



4.7 Serial Interface RS232 – S1

A maintenance console, for example, can be connected via RS232. The interface does not provide a power supply.

4.8 Display-Port – V1

Interface for connecting a monitor

4.9 LC Touch-Display Modul – T1

Grayscale LC display with a resistive touch



4.10 Reset-Button - R1

System reset button

4.11 Power on - Push-Button with LED - P1

The device is switched on via the P1 button. The integrated LED lights up green when the system is powered on.



5 Operating SDoT Server V3B/V3B-2

5.1 Replacing the Audit-Hard Disk – H1

The SDoT Servers V3B/V3B-2 has an audit hard disk that is installed in the form of a removable hard disk. This removable hard disk can be replaced.

For information on the status and changing of the audit hard disk, refer to the user manual of the SDoT Product.

Follow the steps below to securely change the audit disk

1. log in to the SDoT Server V3B/V3B-2 as an **auditor**
2. open **Status Audit system**
3. click on **System » Change HDD**

the entry next to the third diode indicates a change

4. confirm the security prompt with **Change HDD**

the SDoT product switches to **maintenance mode**

the removable hard drive status indicator on the dashboard changes from red to **blue**

a note is displayed on the screen that the audit hard disk is enabled

5. remove the removable hard disk and replace it with an empty disk
6. lock the slide-in module again

The SDoT product sets up the new hard drive as audit storage. The SDoT product independently switches to operational mode.

Keep the data carrier in a safe place and ensure that the stored data is handled in accordance with security requirements.

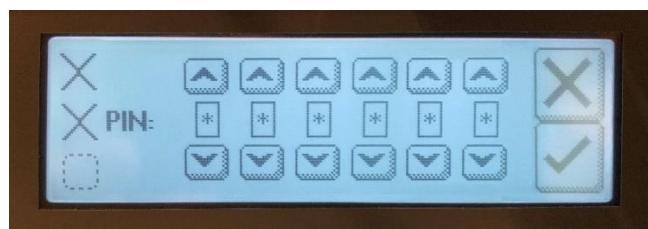
5.2 Starting the SDoT Server V3B/V3B-2

After installing the SDoT Server V3B/V3B-2 in a 19" IT cabinet and connecting it to the power supply using the IEC cables, the device can be put into operation.

The basic steps for operating the SDoT Server V3B/V3B-2 are described below. For detailed information, refer to the manual for your SDoT product.

Put the SDoT Server V3B/V3B-2 into operation:

1. press the **on/off switch P1**
2. follow the indication of the **LC touch display T1**
3. enter the four- or six-digit **system PIN**



PIN Entry on the LC Touch Display

- a. press the arrow keys above and below each PIN field to select the character
- b. as you type, the characters in this field are visible and remain so for a few seconds after you type
- c. the PIN may only contain alphanumeric characters, i.e. the numbers from 0 to 9 and the capital letters from A to Z
4. press the **checkmark key** at the bottom right of the LC touch display to confirm the PIN entry

If you have entered an incorrect PIN, the display will show **PIN incorrect**.

After the third incorrect entry, the SDoT product locks the LC touch display

1. the LC touch display shows the **ident string**
 - a. check whether the ident string is unchanged and confirm this within 30 seconds with the **checkmark key** at the bottom right of the LC touch display
2. the LC touch display shows the start screen of the SDoT Product

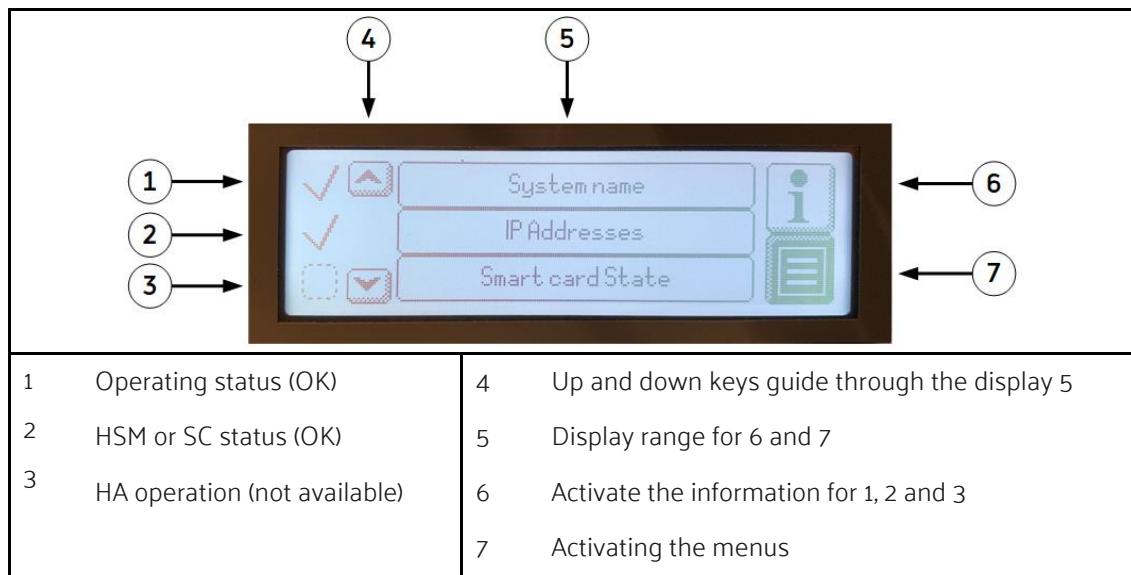


Startup Display of the SDoT Product (exemplary)

The following describes the meaning of the symbols used on the LC touch display.

5.3 LC-Touchdisplay – T1

After the SDoT Server V3B/V3B-2 has booted up successfully, the LC touch display shows the operating status and allows information to be queried.



Menu display on the LC touch display (exemplary)

1. In the left column, the LC touch display shows the status of (1) Operation, (2) Hardware Security Module (HSM) or Smartcard (SC) and (3) High Availability (HA) mode.

The following table describes the individual symbols of these three statuses.

Display symbols for operation, HSM/SC and HA

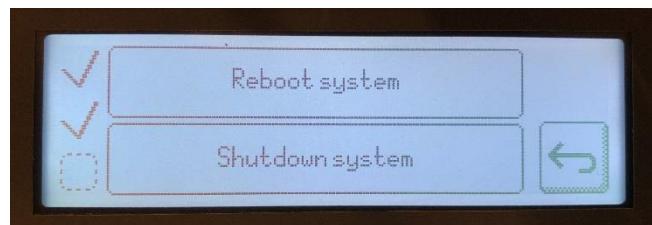
No	Display	Symbol	Description
1	Operating status	✗ Cross	Boot up
		○ Circle	Maintenance mode
		✓ Checkmark	Operational mode
2	Status hardware security module or smartcard	Cross ✗	Incorrect
		✓ Checkmark	All right
3	HA status	□ Dotted square	Not set up
		✓ Checkmark	Active and master
		○ Circle	Active and slave

2. Click on the **i** button (6) at the top right to display more information about the operating mode in the display area (5)
3. Click on the menu button with the three horizontal lines (7) at the bottom right to display the menus in the display area (5)
4. Use the arrow keys to the left of the menu items (4) to move the menus up and down
5. Tap a menu item with your finger to display the settings
 - ▶ System name
 - ▶ IP addresses
 - ▶ System date and system clock time
 - ▶ Version information

5.4 Shutdown and Restart

You can use the LC touch display to both shut down and restart the SDoT Server V3B/V3B-2.

1. click on the menu button with the three horizontal lines (7) at the bottom right to display the menus
2. move the menu items with the arrow keys (5) downwards to the menu item **Reboot / Shutdown system**
3. the LC touch display shows **Reboot system** and **Shutdown system** for selection



Selection on the LC Touch Display

- a. press **Reboot system** to restart the SDoT Server V3B/V3B-2
- b. press **Shutdown system** to turn off the SDoT Server V3B/V3B-2
4. confirm the operation by pressing the checkmark button again

6 Waste disposal and Environmental protection

All electrical and electronic products must be disposed of as hazardous waste. Proper disposal of old equipment prevents environmental damage and health hazards.

Waste equipment that is no longer usable, in accordance with European regulations for environmental protection and raw material recovery, must be disposed of separately from regular household waste. Since disposal regulations may vary from country to country, please contact your supplier if necessary to find out what type of disposal or recycling is required in your country. Each country in the EU, for example, has its own legislation.

7 Package

The original packaging of the SDoT server V3B/V3B-2 is made of recyclable material. For ecological reasons, you should refrain from returning the empty packaging to us.

Package dimensions: 765 x 580 x 144 mm

8 FCC Compliance

FCC ID: 2AZ4S-SEC-SRV-V3B

CAN ICES-003(B) / NMB-003(B)

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

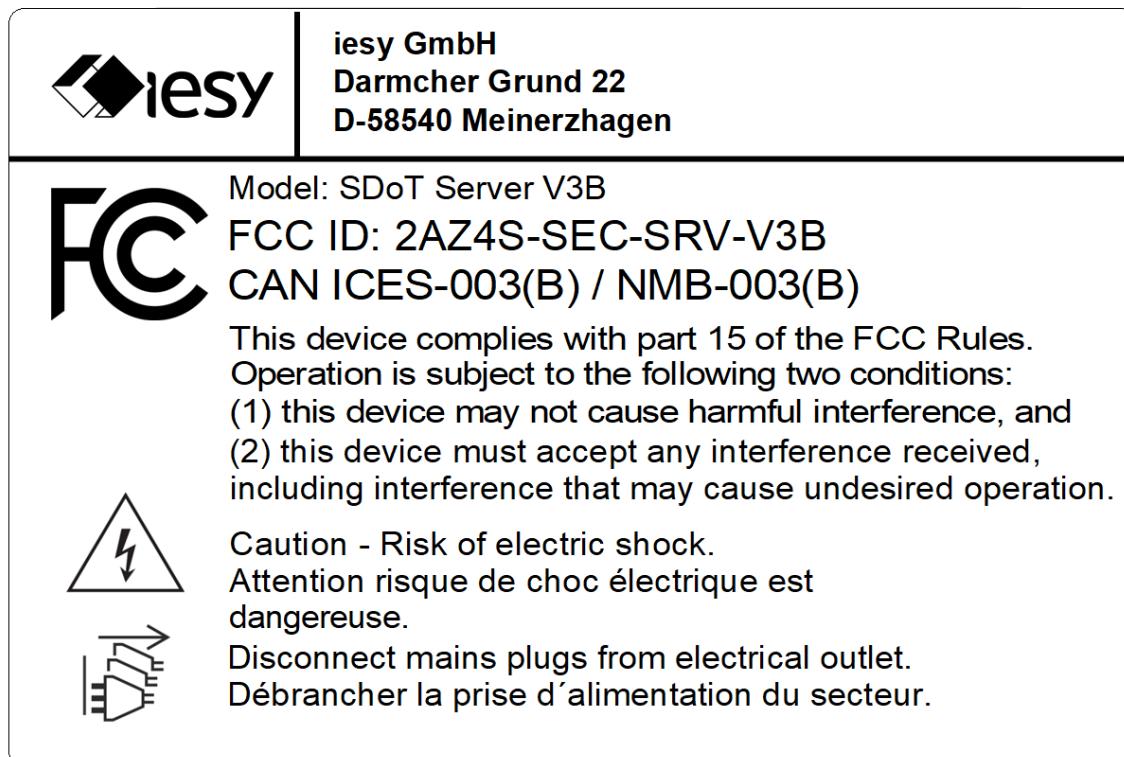
The FCC ID nameplate is attached to the rear of the housing near the power supply. The label contains additional notes and warnings. The type plate must not be removed!

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

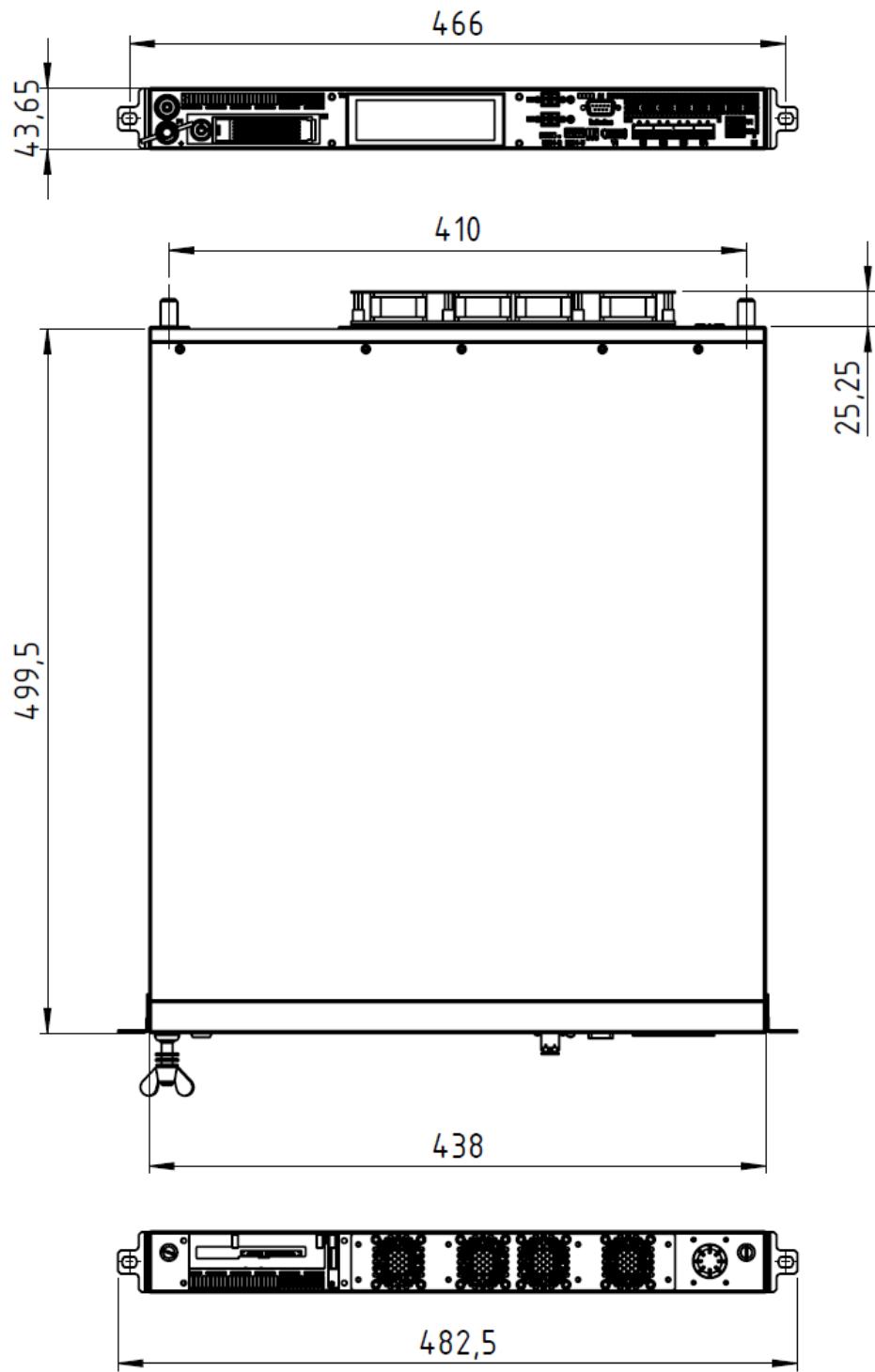
Any changes or modifications made to the device not expressly approved by the party responsible for compliance may void the user's authority to operate the equipment



9 Technical data

- ▶ Type: SDoT Server V3B/V3B-2
- ▶ Operating voltage: 100 – 240 VAC
- ▶ Frequency: 50 – 60 Hz
- ▶ Current consumption: max. 5 A
- ▶ U_{nom} : 230 VAC
- ▶ F_{nom} : 50 Hz
- ▶ I_{nom} : 0,4 A
- ▶ Temperature: operation ($+45^{\circ}\text{C} \pm 2^{\circ}\text{C}$ / 16h) according to: GL VI-7-2:2012, Chapter 3b, Kap.6
- ▶ Temperature: operation ($0^{\circ}\text{C} \pm 3^{\circ}\text{C}$ / 2h) according to: GL VI-7-2:2012, Chapter 3b, Kap.5
- ▶ Weight: 12,5 Kg

10 Dimensions (mm) SDoT Server V3B/V3B-2



11 Revision Tracking

Datum	Revision	Bearbeiter	Firma	Beschreibung
17.04.2023	MANoo	PLU	iesy	Preparation