Unify OpenScape Branch

OpenScape Branch 550 / 550 HA

Installation Guide

12/2024

A31003-H8100-J100-09-7631

Mitel

Notices

The information contained in this document is believed to be accurate in all respects but is not warranted by Mitel Europe Limited. The information is subject to change without notice and should not be construed in any way as a commitment by Mitel or any of its affiliates or subsidiaries. Mitel and its affiliates and subsidiaries assume no responsibility for any errors or omissions in this document. Revisions of this document or new editions of it may be issued to incorporate such changes. No part of this document can be reproduced or transmitted in any form or by any means - electronic or mechanical - for any purpose without written permission from Mitel Networks Corporation.

Trademarks

The trademarks, service marks, logos, and graphics (collectively “Trademarks”) appearing on Mitel’s Internet sites or in its publications are registered and unregistered trademarks of Mitel Networks Corporation (MNC) or its subsidiaries (collectively “Mitel), Unify Software and Solutions GmbH & Co. KG or its affiliates (collectively “Unify”) or others. Use of the Trademarks is prohibited without the express consent from Mitel and/or Unify. Please contact our legal department at iplegal@mitel.com for additional information. For a list of the worldwide Mitel and Unify registered trademarks, please refer to the website: http://www.mitel.com/trademarks.

Contents

History of Changes

Issue	Date	Summary
1	09/2021	First issue of the guide.
2	09/2022	Creation of Chapter 4.4 How to Immobilize the Power Supply’s Alarm Functionality.
3	02/2023	Documentation updates and enhancements.
4	03/2023	Update of pictures. Added Chapter 7.5 How to connect an HDMI monitor to OSB 550 / 550 HA.
5	05/2023	Documentation updates and enhancements.
6	10/2023	Documentation updates and enhancements for ANATEL
7	10/2023	Documentation updates for ANATEL
8	07/2024	Rebranded to the Mitel layout
9	12/2024	Added note under Chapter 3.1 OpenScape Branch 550/550HA models

1. Introduction

OpenScape Branch is a Session Initiation Protocol (SIP) based appliance used in a Voice over IP enterprise communication environment. It is designed specifically for OpenScape Voice solutions, providing essential communication capabilities for remote branch offices.

The OpenScape Branch 550/550 HA is a versatile communication device tailored for business environments. It encompasses a range of essential functionalities, including integrated Proxy, Survivability, Session Border Controller (SBC), SIP Trunking, and Media Server features. Moreover, it offers the added capabilities of a PSTN Gateway (GW) and Analog Terminal Adapter (ATA).

OpenScape Branch 550/550HA is available in various models to cater to diverse requirements. The integration of Analog Terminal Adapter and PSTN Gateway functionality enhances the device's versatility and requires minimal power for operation. For more information on OSB 550/550HA models, see Chapter 3.1 **OpenScape Branch 550/550HA models**.

1.1 About this Guide

This guide focuses on describing the special features of the OpenScape Branch 550 (OSB 550) and OpenScape Branch 550HA (OSB 550HA). It also provides instructions for the installation process, ensuring that you can effectively deploy the OpenScape Branch 550 with its integrated PSTN Gateway and Analog Terminal Adapter (ATA). Administrators and Service Technicians are recommended to study the instructions within this Installation guide before switching on the power.

Intended Audience

The audience of this guide is Unify Professional Services and Back Level Support personnel. Note that this does not preclude other Unify personnel, customers, or third- party service providers who have the prerequisite knowledge necessary to configure OSB550/550HA.

Prerequisite Knowledge

This guide is for the user who has:

- Successfully completed the Unify OpenScape Voice installation and technical training courses.
- Advanced SuSE Linux (OpenSuSE) operating system knowledge and experience.
- Basic knowledge of the third-party platforms and equipment used for OpenScape Voice including: their physical characteristics, their assembly, their documentation (installation, service, and troubleshooting) and the documentation web sites associated with the third-party platform and equipment manufacturers.
- Basic knowledge of the industry standards and specifications utilized by OpenScape Voice and associated equipment.

1.2 Symbols and Abbreviations

The following symbols may be used in this guide:

DANGER DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

NOTICE NOTICE indicates a property damage message.

CAUTION CAUTION indicates a hazardous situation which, if not avoided, may result in minor or moderate injury.

Electric Shock!

This symbol and title warn of hazards due to electrical shocks when touching products or parts of products. Failure to observe the precautions indicated and/or prescribed by the law may endanger your life/health and/or result in damage to your material.

ESD Sensitive Device!

This symbol and title inform that the electronic products and their components are sensitive to static electricity. Care must therefore be taken during all handling operations and inspections of this product in order to ensure product integrity at all times.

Disconnection, all power plugs!

This symbol informs to remove all AC power supply plugs before opening the device.

Connection, protective conductor (PE)!

This symbol informs of HIGH TOUCH CURRENT - Before connecting to the telecommunication network, be sure to make the grounding connection.

Protective Earth (PE)!

This symbol marks the connection point for protective conductor (PE) on the device.

This symbol indicates general information about the product and the guide.
This symbol also indicates detail information about the specific product configuration.

This symbol precedes helpful hints and tips for daily use.

The following abbreviations are used in this guide:

Abbreviation	Meaning
AC	Alternating Current
ACD	Automatic Call Distributor
BRA	Refers to the model sold in Brazil
BRI	Basic Rate Interface
DVI-D	Digital Visual Interface - Digital
FXO	Foreign Exchange Office
HA	High Availability (environment with redundant power supply)
HDD	Hard Disk Drive
LAN	Local Area Network
LED	Light Emitting Diode
MB	Megabyte
MPN	Manufacturer Part Number
MTBF	Mean Time Between Failures
NC	No Cards
NIC	Network Interface Card
PSU	Power Supply Unit
PWR	Power
Qty	Quantity
SIP	Session Initiation Protocol
SSD	Solid State Drive
USB	Universal Serial Bus
WAN	Wide Area Network

2. Scope of Delivery

Check that your delivery is complete and contains all the items listed in **Table 1: Scope of delivery** below. If damaged or missing items are discovered, please contact the dealer.

Table 1: Scope of delivery

Part	Qty	Part Description
OpenScape Branch 550 / OpenScape Branch 550HA	1	System configuration as ordered, incl. a 19” rack mounting set
Rubber feet	4	Self-adhesive
Safety instructions	1	Installation Guide (incl. Ferrite Instruction)
Ferrites	1	Ferrite with OSB 550-D44 /OSB 550HA-D44
	2	Ferrite with OSB 550-A44 / OSB 550HA-A44
	1	Ferrite with OSB 550-DP14 / OSB 550HA-DP14
	1	Ferrite with OSB 550-DP24 / OSB 550HA-DP24
Nut M4	1	Protective grounding equipment
Washer	2	Protective grounding equipment

NOTE: Power cords are not included in delivery. The appropriate country specific power cord must be ordered separately.

NOTE: Slide Rails are NOT included in the product delivery and can be ordered as a separate option.

NOTE: The Display port cable Eco-Server can be ordered with Unify part number: C39195-Z7617-A1.

NOTE: Ferrites are included to reduce EMI for the OSB 550-A44, OSB 550 / 550HA-D44, OSB 550 / 550HA-DP14 and OSB 550/ 550HA-DP24 variants. Ferrites must be installed on FXS and FXO lines.

2.1 Accessories and Spare Parts

Refer to **Table 2: Accessories** and **Table 3: Spare parts**. To view the Manufacture Part Number, the interfaces, and the Unify Part Number for the OSB 550 cards, refer to **Table 9: Part number information for the OSB 550 cards** in Chapter **9.2. Standard Interfaces.**

Table 2: Accessories

Rack Slide Rails Kit contents For OSB 550 / 550HA (KISS 2U System)	Qty
Slide rails	2
Rack mounting bracket for 2U/4U systems	4
Plate with 2XM6 threaded holes	4
Countersunk head screw M6X10	8
Countersunk head screw M4X10	8

NOTE: The installation of the OSB 550 / 550HA platform needs to be carried out only by qualified personnel familiar with the associated dangers. Detailed instructions on how to install the slide rails are included in the Slide Rails Kit.

⚠WARNING

During the mounting procedure into a 19" industrial cabinet the OSB 550 / 550HA system must be powered down and the power cord must be disconnected from the power source. Disconnect all peripherals.

Table 3: Spare parts

Part Number	Part Description
F31505-E21-S102	Fan Unit
F31505-E21-S103	AC PSU for OSB550
F31505-E21-S105	Red.AC PSU for OSB550HA (2pcs needed in each OSB550HA)
F31505-E21-S107	SSD M.2 128GB
V39113-Z7000-A3	Battery CR2032
S30122-X8011-X13	Alarm cable/connector
S30122-X8004-X51	OSB 550 Card 4FXS
S30122-X8004-X52	OSB 550 Card 4FXO
S30122-X8004-X53	OSB 550 Card 2E1/T1PRI
S30122-X8004-X54	OSB 550 Card 1E1/T1PRI
S30122-X8004-X55	OSB 550 Card 4BRI
S30122-X8004-X56	OSB 550 Card 4E1/T1PRI
S30122-X8004-X57	NIC card
F31505-E21-A1	OSB 550 D44 model
F31505-E21-A2	OSB 550 A44 model
F31505-E21-A3	OSB 550 DP14 model
F31505-E21-A4	OSB 550 DP24 model
F31505-E21-A6	OSB 550 DP4 model
F31505-E21-A7	OSB 550 DP8 model
F31505-E21-A101	OSB 550HA D44 model
F31505-E21-A102	OSB 550HA A44 model
F31505-E21-A103	OSB 550HA DP14 model
F31505-E21-A104	OSB 550HA DP24 model
F31505-E21-A106	OSB 550HA DP4 model
F31505-E21-A107	OSB 550HA DP8 model
F31505-E21-A1	OSB 550 D44 model
F31505-E21-A101	OSB 550HA D44 model
F31505-E21-A2	OSB 550 A44 model
F31505-E21-A102	OSB 550HA A44 model
F31505-E21-A202	OSB 550 A44 model (BRA variant)
F31505-E21-A302	OSB 550HA A44 model (BRA variant)
F31505-E21-A3	OSB 550 DP14 model
F31505-E21-A103	OSB 550HA DP14 model
F31505-E21-A203	OSB 550 DP14 model (BRA variant)
F31505-E21-A303	OSB 550HA DP14 model (BRA variant)
F31505-E21-A4	OSB 550 DP24 model
F31505-E21-A104	OSB 550HA DP24 model
F31505-E21-A204	OSB 550 DP24 model (BRA variant)
F31505-E21-A304	OSB 550HA DP24 model (BRA variant)

F31505-E21-A5	OSB 550 NC
F31505-E21-A105	OSB 550HA NC
F31505-E21-A6	OSB 550 DP4 model
F31505-E21-A106	OSB 550HA DP4 model
F31505-E21-A206	OSB 550 DP4 model (BRA variant)
F31505-E21-A306	OSB 550HA DP4 model (BRA variant)
F31505-E21-A7	OSB 550 DP8 model
F31505-E21-A107	OSB 550HA DP8 model
F31505-E21-A207	OSB 550 DP8 model (BRA variant)
F31505-E21-A307	OSB 550HA DP8 model (BRA variant)

2.1.1 Packaging

The OpenScape Branch 550 / 550 HA is packed together with all standard parts in a product specific cardboard packaging with suitable shock absorbers inside. Each item is packaged separately.

Note that the sticker on the OSB 550 server may show the MAC address of ETH1 instead of the expected ETH0. This is because the CLA application uses ETH1's MAC address for the Advanced Locking ID (ALI) generation. Please proceed with the installation process as outlined in this guide, keeping in mind this difference in MAC address assignment.

3 OpenScape Branch 550/550HA - Overview

The OpenScape Branch 550 is designed for high performance, reliability and offers total flexibility with installation options in a 19” industrial rack or on a desktop.

NOTE: The OpenScape Branch 550HA has a redundant power supply and is otherwise identical to the OSB 550.

Table 4: Technical Characteristics

General Features	
Based on:	KISS 2US V3 CFL model server
Physical size (WxHxD):	482 x 88 x 355 mm (18.9” x 3.4” x 13.9”)
Weight:	up to 7 kg (15.3 lb)
Average Power Consumption:	41W
Rated Heat Emission:	648 kJ/h (614.2 BTU)
Operating Temperature:	0-50°C (32-122°F)
Operating Humidity:	10 ~ 93% @ 40 °C, non-condensing
MTBF:	> 50000 hours (Server only)

Air flow:	Front to rear
Rated power (OSB 550) -Single AC Power Supply	
Year 2021:	250W, 100-240 VAC, 50-60 Hz, 80 Plus
Year 2022:	300W, 100-240 VAC, 50-60 Hz, 80 Plus silver
Rated power (OSB 550 HA) - Redundant AC Power Supply (high availability)	
Year 2021:	2x 300W, 100-240 VAC, 50-60 Hz, 80 Plus silver
Board	
Mainboard	D3641 micro-ATX C246
Processor Type	Intel Pentium G5400T

Chipset	Intel® C246 Express
Memory	RAM 2x 4GB DDR4 2666 (non ECC)
Front I/O	
USB	2x USB 2.0
Rear I/O	
USB	4x USB 2.0 2x USB 3.1 Gen1 2x USB 3.1 Gen2
LAN	2x 1 Gb (1x i219LM & 1x i210AT) 10/100/1000 Mbit/s ATM 12.0 /vPro support Teaming support
Display	1x DVI-D (1920 x 1200 @60 Hz) 2x Display Port V 1.2 (4096x2304 @60Hz)
PS/2	Keyboard, Mouse
Audio	1x Line in, 1x Line out 1x Microphone
Serial Port	1x RS232
	(Two optional additional serial ports cutouts on the rear side of the chassis)
Software	
Operating System	MS Windows 10 IoT x64 Linux Ubuntu 1804 LTSB Desktop 64 bit
BIOS	AMI UEFI BIOS 5.x[1]

3.1 OpenScape Branch 550/550HA models

The OpenScape Branch 550 is available in various models to cater to diverse requirements:

- OpenScape Branch 550 **D44** | OpenScape Branch 550HA **D44**

  Digital – **4** BRI ports + **4** FXS ports
- OpenScape Branch 550 **A44** | OpenScape Branch 550HA A44

  Analog – **4** FXO ports + **4** FXS ports
- OpenScape Branch 550 **DP14** | OpenScape Branch 550HA **DP14**

  Digital – **1** E1/T1 PRI port + **4** FXS ports
- OpenScape Branch 550 **DP24** | OpenScape Branch 550HA **DP24**

  Digital – **2** E1/T1 PRI ports + **4** FXS ports
- OpenScape Branch 550 **NC** | OpenScape Branch 550HA **NC**

  No **c**ards connected

For businesses needing higher capacity for connecting phone lines, the OpenScape Branch 550 offers two larger models:

- OpenScape Branch 550 **DP4** | OpenScape Branch 550HA **DP4**

  Digital – **4** E1/T1 **P**RI ports
- OpenScape Branch 550 **DP8** | OpenScape Branch 550HA **DP8**

  Digital – **8** E1/T1 **P**RI ports

Note: Splitter box for E1/T1 Redundancy is not supported.

The tables in this chapter include all OSB 550 models and their variants. The correct variant must be ordered to support FXO, FXS, BRI, E1/T1.

Figure 1: OSB 550 / 550 HA slots

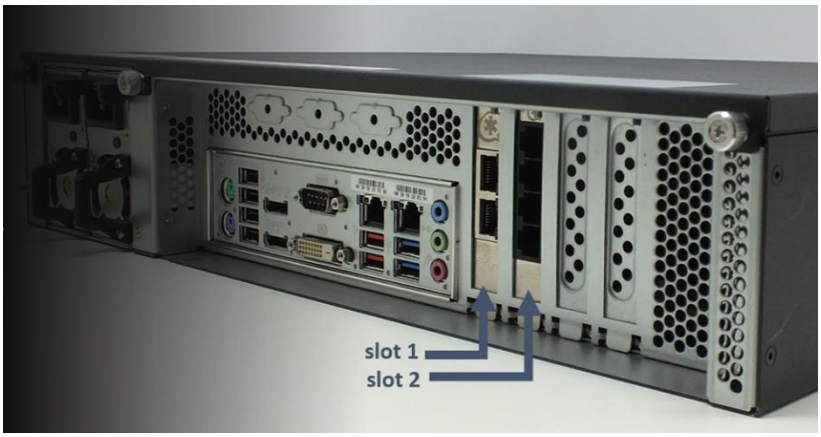


Table 5: OpenScape Branch 550 models

Model	Variant	Slot 1 MPN Sangoma	Slot 2 MPN Sangoma
OSB 550	**D44**	4x BRI	4x FXS
		4B433LF-13	4A4B05F-13
OSB 550	**A44**	4x FXO	4x FXS
		4A4B02F-13	4A4B05F-13
OSB 550	**DP14**	1x E1/T1 PRI	4x FXS
		4TE131F-13	4A4B05F-13
OSB 550	**DP24**	2x E1/T1 PRI	4x FXS
		4TE235BF-13	4A4B05F-13

Model	Variant	Slot 1 MPN Sangoma	Slot 2 MPN Sangoma
OSB 550	**DP4**	4x E1/T1 PRI 4TE435BF-13	
OSB 550	**DP8**	4x E1/T1 PRI 4TE435BF-13	4x E1/T1 PRI 4TE435BF-13
OSB 550	**NC**		
OSB 550HA	**D44**	4x BRI 4B433LF-13	4x FXS 4A4B05F-13
OSB 550HA	**A44**	4x FXO 4A4B02F-13	4x FXS 4A4B05F-13
OSB 550HA	**DP14**	1x E1/T1 PRI 4TE131F-13	4x FXS 4A4B05F-13
OSB 550HA	**DP24**	2x E1/T1 PRI 4TE235BF-13	4x FXS 4A4B05F-13
OSB 550HA	**DP4**	4x E1/T1 PRI 4TE435BF-13	
OSB 550HA	**DP8**	4x E1/T1 PRI 4TE435BF-13	4x E1/T1 PRI 4TE435BF-13
OSB 550HA	**NC**		

Table 6: OpenScape Branch 550 /550HA Performance

	OSB 550 / OSB 550HA						
Models	**D44**	**A44**	**DP14**	**DP24**	**DP4**	**DP8**	**NC**
Max. supported number of SIP registered lines[1]	500	500	500	500	500	500	500
Max. number of concurrent sessions	400	400	400	400	400	400	400
Max. number of calls per second (continuous)	4	4	4	4	4	4	4
Max. registrations per second (background)	10	10	10	10	10	10	10
Max. registrations per second (peak)	500	500	500	500	500	500	500
Max. number of concurrent announcement ports	16	16	16	16	16	16	16
Max. number of concurrent conference ports	30	30	30	30	30	30	30
Max. number of supported languages	2	2	2	2	2	2	2
Max. number of backup ACD agents	250	250	250	250	250	250	250
Max. number of SIP trunking sessions	60	60	60	60	60	60	60
Number of FXO ports	NA	4	NA	NA	NA	NA	NA
Number of BRI ports2	4	NA	NA	NA	NA	NA	NA
Number of E1/T1 PRI ports	NA	NA	1	2	4	8	NA
Max. number of concurrent integrated gateway calls	8	4	30	60	120	240	NA
Number of Analog Terminal Adapter ports (FXS)	4	4	4	4	NA	NA	NA
Max. number of concurrent Voice Mail Calls	5	5	5	5	5	5	5
Max. allocated storage for Voice Mail messages (MB)	200	200	200	200	200	200	200
Max. number of stored Voice Mail messages	60	60	60	60	60	60	60
Max. number of Management Sessions	5	5	5	5	5	5	5

[1]Registered lines includes primary lines, secondary call appearances and phantom lines.

3.2 Hardware Characteristics

OpenScape Branch 550 / 550HA is a scalable 2U rackmount system equipped with a micro-ATX mainboard. The flexible customer-specific hardware system configuration and the robust construction with excellent mechanical stability offers the superior qualities of a computer designed for operation in harsh industrial environments.

The OpenScape Branch 550/550HA is designed for horizontal operation. Vertical operation is possible.

3.2.1 Front Side

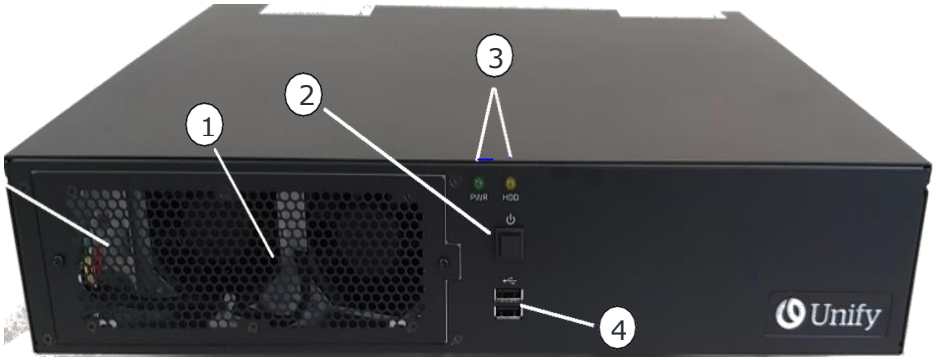
The front side of a OSB550 /550 HA consists of the following components:

- Two system fans attached to the product by means of a slide-in fan assembly.
- The slide-in fan assembly allows easy installation and removal of the two system.
- fans and enables replacement even during operation.
- The power button.
- A PWR and an HDD LED indicator.
- Two USB (2.0) ports.

When powering on the OpenScape Branch 550 / 550HA make sure that the ventilation holes (air intake and air exhaust) are not obstructed by objects.

Figure 2 shows the position of each component in the front panel of a OSB 550/550 HA device.

Figure 2: OSB 550 / 550 HA front side

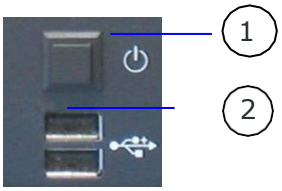


1. Air cooling system
2. Power button
3. LED indicators
4. 2 USB (2.0) ports

3.2.1.1 USB Ports

The two USB 2.0 ports are located on the front side of the product.

Figure 3: Power button and USB 2.0 ports



1. Power button
2. USB (2.0) ports

3.2.1.2 Power button and LED indicators

Power Button

Press the power button to switch on or switch off the product. Pressing the power button for longer than four seconds initiates a forced system shutdown before the power to the product is switched off.

WARNING The power button does not disconnect the product from the mains power supply. When switched off using the power button, there is still a standby voltage of 5 VSB on the mainboard.

WARNING **AC Power cable and power connectors must always remain easily accessible.**

The OpenScape Branch 550 / 550HA is completely disconnected from the mains power supply only when all power cables are disconnected from the mains power sockets or the OpenScape Branch 550's AC input power connector.

NOTICE Performing a forced shutdown can lead to loss of data or other undesirable effects.

LED indicators

Refer to **Table 7** for the activity description of the LED indicators.

Figure 4: LED indicators

3. Power LED

4. HDD activity LED

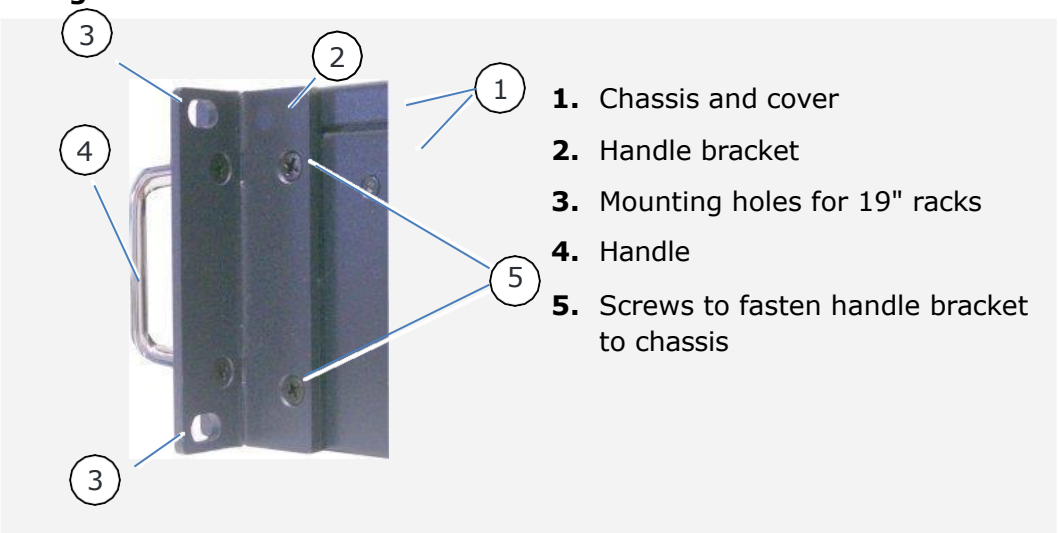
Table 7: Power LED and HDD LED activity description

Power LED (green)	LED illuminates when the product is switched on by pressing the power button. **Prerequisite:** Connection to an appropriate AC power source.
HDD LED (orange)	LED lights up during hard disk activity.

3.2.1.3 Handle brackets

The handle brackets (Figure 4) can be mounted optionally for installation in a 19'' industrial rack.

Figure 5: Handle bracket



1. Chassis and cover

2. Handle bracket

3. Mounting holes for 19" racks

4. Handle

5. Screws to fasten handle bracket to chassis

3.2.2 Rear Side

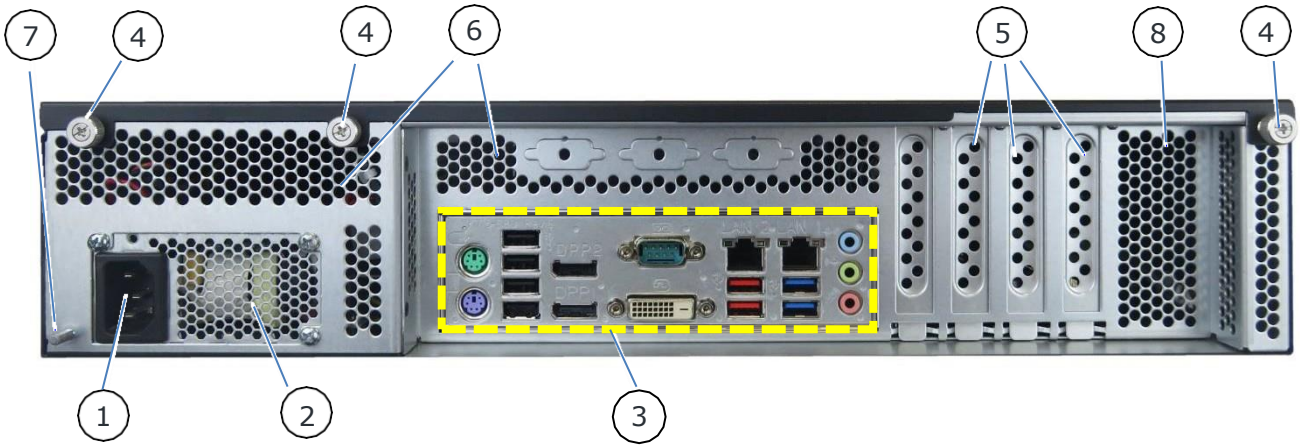
The rear panel includes the following:

- the external interfaces of the integrated mainboard.
- any expansion cards interfaces/ports.
- the power supply unit (PSU) sockets.
- air exhaust ventilation holes.

i The positioning and number of interfaces varies depending on the system configuration.

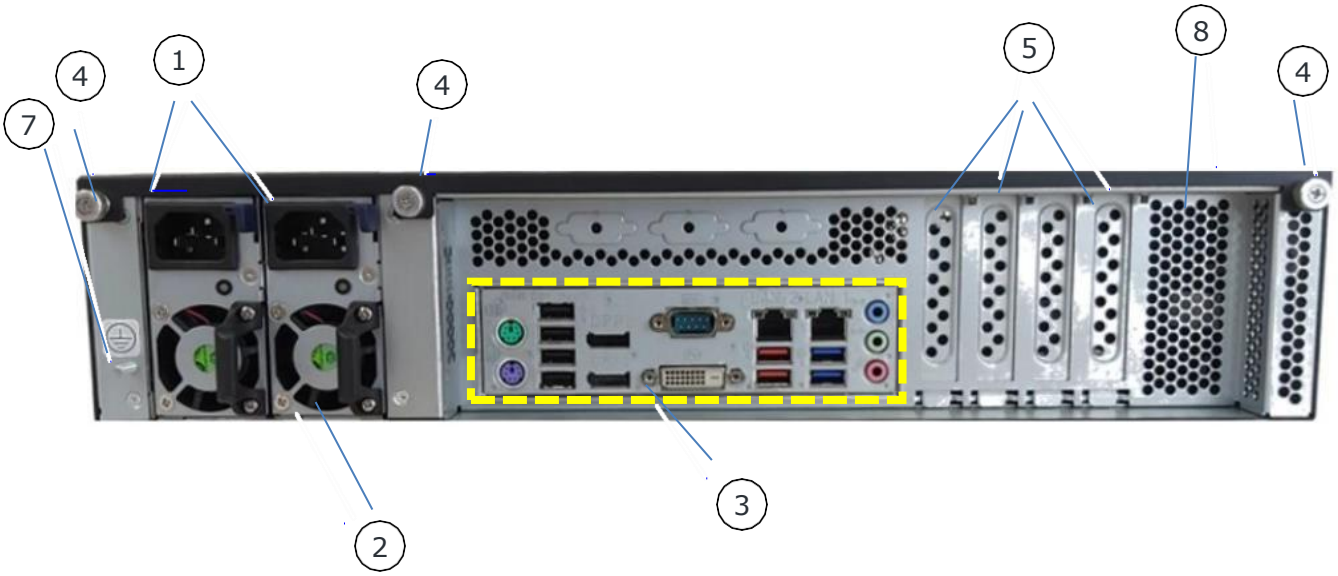
Figures 6 and 7 show the position of each component in the rear side of OSB 550 and OSB 550 HA respectively.

Figure 6: Rear side of OSB 550



1. Input power socket
2. Power Supply Unit (PSU) ventilation holes
3. Mainboard external interfaces
4. Rear side of the cover with three knurled screws
5. Slot brackets for:
   - Slots 1-2: gateway cards
   - Slots 3: NIC card
   - Slot 4: reserved, see Table 8
6. Cut-outs for optional interfaces routed to the rear (9-pin D-SUB type)
7. Potential equalization stud
8. Ventilation holes

Figure 7: Rear side of OSB 550HA



1. Input power sockets
2. Power Supply Unit (PSU)
3. Mainboard external interfaces
4. Rear side of the cover with three knurled screws
5. Slot brackets for:
   - Slots 1-2: gateway cards
   - Slot 3: NIC card
   - Slot 4: reserved; see Table 8
6. Cut-outs for optional interfaces routed to the rear (9-pin D-SUB type)
7. Potential equalization stud
8. Ventilation holes

3.2.2.1 Power Supply Unit

OpenScape Branch 550

The Power Supply Unit (PSU) is located on the rear side of the product and supplies the required internal 12V, 5V and 3.3V voltages using standard certified cabling. The OpenScape Branch 550 supports a 300W PSU with a nominal voltage range 100 V to 240 V.

OpenScape Branch 550 HA

The Power Supply Unit (PSU) is located on the rear side of the product and supplies the required internal 12V, 5V and 3.3V voltages using standard certified cabling. The OpenScape Branch 550 supports a 2 x 300W hot-swappable PSU with a nominal voltage range 100 V to 240 V.

⚠WARNING Even when switched off using the power button parts of the product may still be energized! The product is only completely switched off by switching off power using the power button and disconnecting the power cable from the mains power supply or input power socket.

⚠WARNING **AC Power cable and power connectors must always remain easily accessible.**

If the end environment restricts access to the power cable, disconnection must be guaranteed using a separate cut-off fixture. Cutting off the electrical power to the device is important to ensure that there is no risk of electric shock or other electrical hazards.

NOTICE

Do not disconnect the power from the product while the product is switched on!

Performing a forced shut down may lead to loss of data or other undesirable effects! Switch off using the power button to perform an orderly shutdown without data loss.

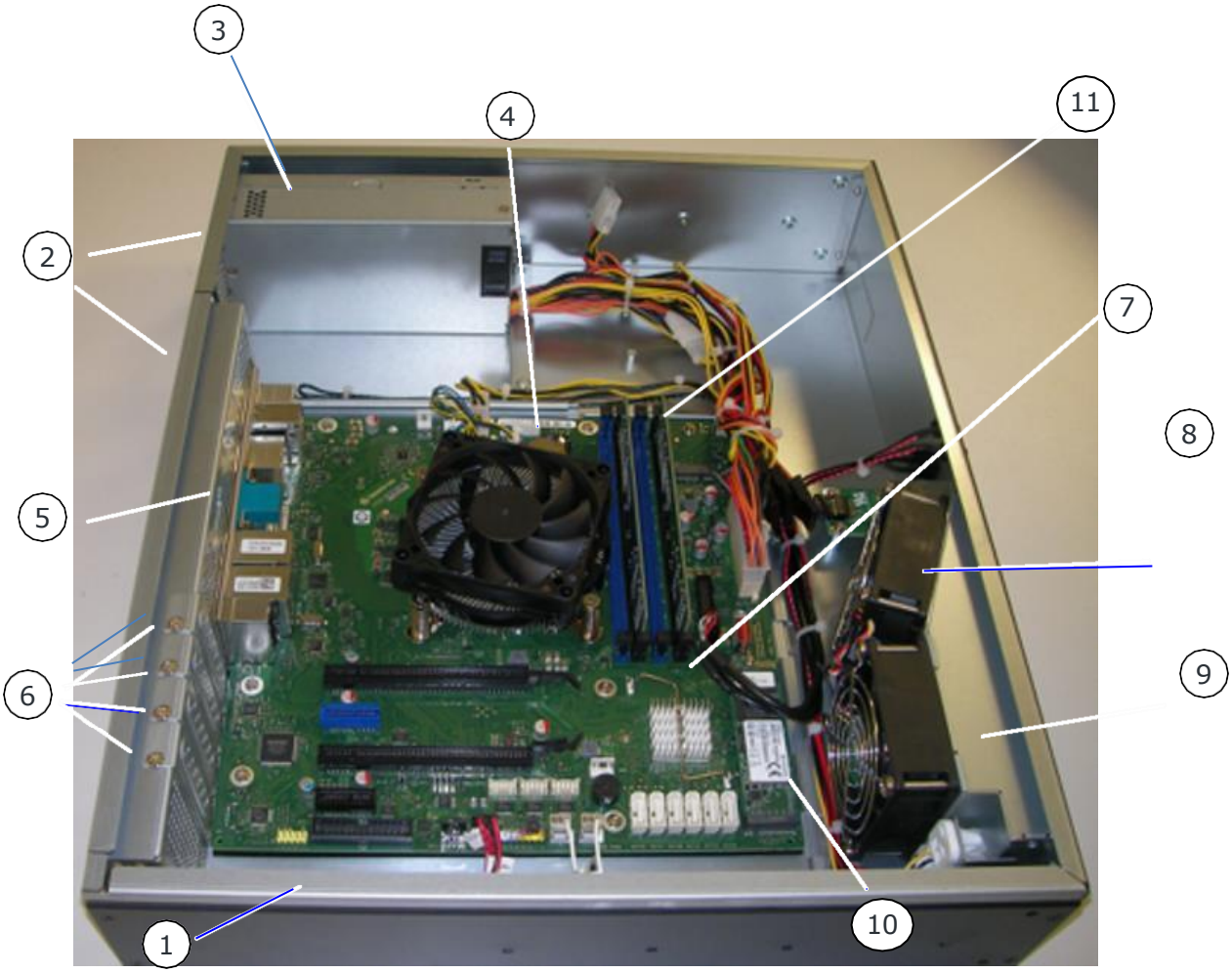
Figure 8: OSB 550- PSU 300W AC with single AC input power socket

Figure 9: OSB 550HA-Redundant AC Power Supply 2x300W (high availability)

3.2.3 Mainboard

This chapter includes an overview of the components of the OSB 550 /550 HA mainboard.

Figure 10: Configuration with micro-ATX mainboard and low-profile expansion cards



1. Cover retaining plate on the front side
2. Cover retaining plates on the rear side
3. Power Supply Unit (PSU)
4. Battery CR2032
5. Interface connectors (available externally)
6. Fastening screws for the slot brackets
7. Mainboard
8. Fans (of the fan assembly)
9. Fan assembly
10. M.2 SSD drive
11. 3 slots for DDR4 RAM

The following slots are available on the rear side of the chassis:

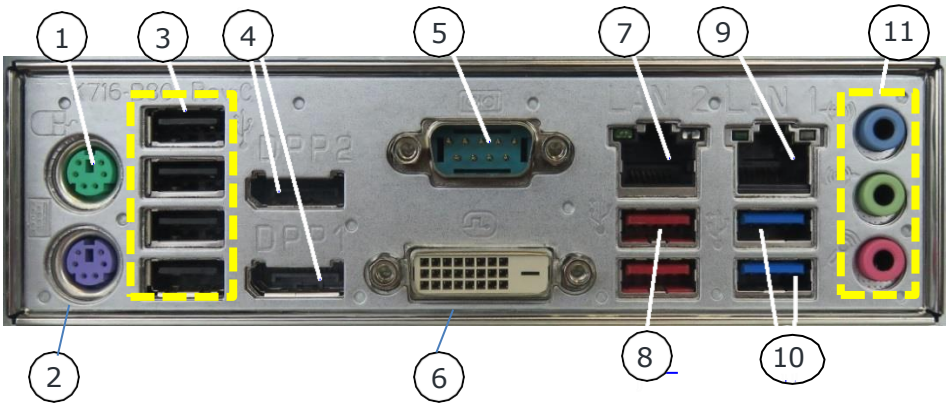
Table 8: Low Profile cards slots

Installed Mainboard	Low Profile cards
micro-ATX (CFL)	Up to 4x PCIe (low profile) 1. Slot 1: x16: 1x 16 lanes, Gen3 (Reserved for OSB 550 Card 1) 2. Slot 2: PCIe 1x Gen3, "open" (Reserved for OSB 550 Card 2) 3. Slot 3: PCIe 1x4 lanes, Gen3 (Reserved for NIC Card). 4. Slot 4: PCIe 1x Gen3, "closed" (Reserved for OSB 550 future variant)

3.2.3.1 External Interfaces

Depending on the installed mainboard, the following external interfaces are available for peripherals.

Figure 11: External mainboard interface panel OpenScape Branch 550 / 550 HA



1. Mouse
2. Keyboard
3. 4x USB 2.0
4. 2x DP V1.2
5. Serial port (COM)
6. DVI-D
7. WAN port
8. 2x USB 3.1 (Gen 2) Type A
9. LAN port (iAMT)
10. 2x USB 3.1 (Gen 1) Type A
11. Audio jacks

3.3 General Instructions on Usage

To maintain the product warranty, this product must not be altered or modified in any way. Changes or modifications to the product, that are not explicitly approved by Unify Software and Solutions GmbH & Co. KG and described in this guide or received from Unify Software and Solutions GmbH & Co. KG Support as a special handling instruction, will void your warranty.

Install the product only in or connected to systems that fulfill all necessary technical and specific environmental requirements. Operational temperature range of the specific product version must not be exceeded.

Perform all necessary installation and application operations only by following the instructions provided in this guide.

Keep all the original packaging material for future storage or warranty shipments. If it is necessary to store or ship the product, then re-pack the product as it was delivered.

Special care is necessary when handling or unpacking the product. Refer to any special handling and unpacking instruction within this guide.

3.3.1 Minimum System Clearance

To guarantee that sufficient air flows from the front to the back of the chassis, ensure that the ventilation holes are not covered, blocked, or obstructed by surrounding parts.

Before installing the OpenScape Branch 550 / 550HA consider any thermal considerations mentioned in 3.9 Thermal Considerations, such as airflow obstructions and the correct mount orientation.

⚠WARNING Ensure Sufficient Airflow

Ensure that the 19” rack cabinet is well ventilated and does not prevent the OpenScape Branch 550 / 550HA from taking in air at the front or exhausting air at the rear.

⚠WARNING

Do not place the product close to heat sources and damp or dusty places.

There are no ventilation restrictions for the up or bottom side of the product. Installation of the product directly on top of or below another system is possible.

4. Safety Information

⚠WARNING

Read and observe the General Safety instructions that have been compiled for the operator's safety to ensure accordance with regulations and avoid injuries and/or product damage. The manufacturer is exempt from accident liability (including the warranty period) in case the instructions within this guide are not observed.

4.1 General Safety Instructions

The product has been built and tested according to the basic safety requirements for low voltage (LVD) applications. To ensure safety, the operator must observe the correct operating conditions for the product and the following general safety instructions:

- The product must be used as specified in the instructions within this guide. The guide contains guidelines for the setup, assembly, installation, maintenance, transport, and storage of the product.
- The on-site electrical installation must meet the requirements of the country's specific local regulations.
- The communication system should only be operated with outlets that have connected ground contacts.
- During a thunderstorm, do not connect or disconnect lines and do not install or remove boards.
- If supplied with a power cable, only use the supplied power cable.
- Replace the power cable immediately if it appears to be damaged.
- Do not use an extension cable to connect the product.
- Use separate ground wires to provide protective grounding for the communication system. Before you start up the system and connect the phones and phone lines, connect the communication system with a permanent earthing conductor (PE).
- Only use communication lines with a conductor diameter of 0.4 mm (AWG 26) or more.
- To guarantee that sufficient air flow is available to cool the product, ensure that ventilation openings are not covered or blocked.
- Do not place the product close to heat sources or damp places.
- Only connect devices or parts that fulfill the requirements of circuits as stipulated by IEC 62368-1 to the available interfaces.
- Make sure that the product is disconnected from the mains before removing or reinstalling any parts.
- Switching off the product by the power button does not disconnect the product from the mains. Complete disconnection is only possible if the power cable is removed from the wall plug or from the product. Ensure that there is free and easy access to enable disconnection.
- The product may be opened only for the insertion or removal of add-on cards (depending on the configuration of the system). This should be carried out only by qualified operators.

- For any configuration process, observe the following:
    - Adhere to the legal regulations and technical data.
    - Make sure power consumption of any add-on card does not exceed the specified limitations.
    - Ensure current consumption of the product does not exceed the value stated on the product label.
    - Use only original accessories and spare parts approved by Unify Software and Solutions GmbH & Co. KG.

NOTE: Safe operation is no longer possible when any of the following applies:
Product has visible damage.
Product is no longer functioning.

In these cases, the product must be switched off and disconnected from the mains. Ensure that the product can no longer be used.

- After completing test and maintenance work, make sure that all safety equipment is re-installed in the right place.
- Install cables in such a way that they do not pose a risk of an accident (tripping) and cannot be damaged.
- When working on an open communication system, make sure that it is never left unattended.
- When working on the systems, never wear loose clothing and always tie back long hair.
- Do not wear jewelry, metal watchbands or clothes with metal ornaments or rivets.
- Always wear the necessary eye protection whenever appropriate.
- Always wear a hard hat where there is a risk of injury from falling objects.
- Make sure that the work area is well lit and tidy.
- Sudden changes in temperature can result in a buildup of condensation. For example, if a communication system or server is transported from a cold environment to warmer areas, this could result in condensation because of excessive humidity.
- Wait until the communication system or server has adjusted to the ambient temperature and is completely dry before starting it up.

Emergencies

What to do in an emergency:

- In the event of an accident, use caution and remain calm and controlled.
- Always switch off the power supply before touching the victim.
- If you are not able to disconnect the power supply, use a nonconductive object, such as a wooden rod, to push or pull the victim away from electrical contact.
- Administer first aid. Immediately
- call for help.

First Aid

- Be familiar with basic first aid procedures for electrical shock. A fundamental knowledge of various resuscitation methods in case the victim has stopped breathing or if the victim's heart is no longer beating, as well as first aid for treating burns, are necessary in such emergencies.
- If the victim is not breathing, immediately perform mouth-to-mouth or mouth-to-nose resuscitation.
- If you are trained and certified, administer cardiac compression in case the victim's heart is not beating.

Call for Help

Immediately call a rescue group, ambulance, or hospital. Provide the following information in the following sequence:

- Where did the accident happen?
- What happened?
- How many people were injured?
- What type of injuries?

Wait for questions.

Reporting Accidents

- Report to your manager all accidents, near accidents, and possible hazards to ensure their causes are resolved as soon as possible.
- Report any electric shock incident, no matter how small.

Refer to the OpenScape Branch 550/550 HA Security Checklist for the measures to be taken to secure OpenScape Branches.

⚠WARNING
It is of vital importance that security measures outlined in the Security Checklist are executed.

4.2 Safety with electricity

The new OpenScape Branch 550 / 550HA product has been developed and tested carefully to provide all features necessary to ensure its compliance with electrical safety requirements. It has also been designed for a long fault-free life. However, the life expectancy of your product can be drastically reduced by improper treatment during unpacking and installation. Therefore, for your own safety and for the correct operation of your new OpenScape Branch 550 / 550HA product, you are requested to conform with the following guidelines.

4.2.1 High Voltage Safety

As a precaution and in case of danger, the power connectors must be easily accessible. The power connectors are the product's main disconnect device.

⚠CAUTION Warning

All operations on this product must be carried out by sufficiently skilled personnel only.

Electric Shock!

Before installing a non-hot-swappable OpenScape Branch 550 / 550HA into a system always ensure that your main power is switched off. This also applies to the installation of piggybacks. There is a risk of serious electrical shock hazards during all installation, repair, and maintenance operations on this product. Therefore, always unplug all power cables and any other cables which provide external voltages before performing any work on this product.

Protective conductor (PE) connection should remain connected to a central grounding point. The protective conductor (PE) cable should be the last cable to be disconnected or the first cable to be connected when performing installation or removal procedures on this product.

4.3 Special Handling and Unpacking Instructions

Do not handle this product out of its protective enclosure while it is not used for operational purposes unless it is otherwise protected.

Whenever possible, unpack or pack this product only at ESD safe workstations. When a safe workstation is not guaranteed, it is important for the operator to be electrically discharged before touching the product with his/her hands or tools. This is most easily done by touching a metal part of your system housing.

It is particularly important to observe standard anti-static precautions when changing piggybacks, ROM devices, jumper settings etc. If the product contains batteries for RTC or memory backup, ensure that the product is not placed on conductive surfaces, including anti-static plastics or sponges. They can cause short circuits and damage the batteries or conductive circuits on the product.

ESD Sensitive Device!

Electronic products and their components are sensitive to static electricity. Therefore, care must be taken during all handling operations and inspections of this product to always ensure product integrity.

⚠CAUTION Handling and operation of the product is permitted only for trained personnel within a workplace that is access controlled. Follow the "General Safety Instructions" in this guide (see Chapter 3.1).

4.4 Lithium Battery Precautions

When replacing the mainboard's lithium battery observe the instructions described in 3. Safety Information and 3.5 Accessing Internal Components.

⚠WARNING Danger of explosion when replaced with wrong type of battery or if the battery is replaced incorrectly!

- Replace only with the same or equivalent type recommended by the manufacturer.
- The lithium battery type must be UL recognized.
- Dispose the used batteries according to the manufacturer's instructions.

Do not dispose lithium batteries in general trash collection. Dispose the battery according to the local regulations dealing with the disposal of these special materials, (e.g. to the collecting points for dispose of batteries).

4.4.1 Replacing the Lithium Battery

Refer to Chapter 3.1 General Safety Instructions, 3.4 Lithium Battery Precautions and 3.5 Accessing Internal Components before replacing the lithium battery.

⚠WARNING Danger of explosion when replaced with wrong battery type

Replace only with the same or equivalent type recommended by the manufacturer.
The lithium battery type must be UL recognized.

Do not dispose of lithium batteries in general trash collection. Dispose of the battery according to the local regulations dealing with the disposal of these special materials, (e.g., to the collecting points for dispose of batteries).

To replace the lithium battery on the mainboard, proceed as follows:

1. Switch off and disconnect the product from the mains power supply.
2. Remove the lithium battery from the holder by pulling the ejector spring outwards.
3. Place a new lithium battery in the battery holder. Pay attention to the polarity of the battery.
4. Replace the lithium battery only with the same type of battery or with a type of battery recommended by Unify Software and Solutions GmbH & Co. KG.
5. Reinstall the removed expansion cards and reattach the connecting cables.

4.5 Accessing Internal Components

This chapter contains important information on working safely with internal components. Follow these instructions when handling internal components and observe the corresponding safety instructions included in 3.1 General Safety Instructions.

⚠WARNING Energy hazards- 120-240 VA present inside the chassis!

Before removing the top cover, switch off the product properly using the power button on the front side and disconnecting the power cable from the mains power supply.

⚠WARNING Activities requiring internal access of the product must be performed by trained personnel aware of the associated dangers!

ESD Sensitive Device! Follow the safety instructions for components that are sensitive to electrostatic discharge (ESD) in 3.6 Electrostatic discharge. Failure to observe this warning notice can cause damage to the components.

4.6 Electrostatic discharge (ESD)

Proper packaging and grounding techniques are necessary precautions to prevent damage. Always take the following precautions:

1. Transport ESD-sensitive products in ESD-safe containers such as boxes or bags.
2. Keep electrostatic sensitive parts in their containers until they arrive at the ESD-safe workplace.
3. Always be properly grounded when touching sensitive products, components, or assembly.
4. Store electrostatic-sensitive products in protective packaging or on antistatic mats.

A sudden discharge of electrostatic electricity can destroy static-sensitive devices.

4.7 Protective Grounding

This chapter provides guidelines for a secure connection to the ground potential to protect against dangerously high touch voltages in the event of a malfunction.

DANGER **Risk of electric shock through contact with live wires!**

Only personnel with proper qualifications or qualified electricians should perform work on the low-voltage network (<1000 VAC). All work must comply with the national/local requirements for electrical connections.

WARNING **Risk of electric shock through contact with live wires!**

Use separate ground wires to provide protective grounding (PE) for the OpenScape Branch 550 / 550HA communication system and possibly any main distribution frames being used. Connect your communication system and your main distribution frame to the ground wire before starting up the system and connecting telephones and lines.

Make sure that the ground wires laid are protected and strain relieved.

Figure 12: Protective grounding equipment

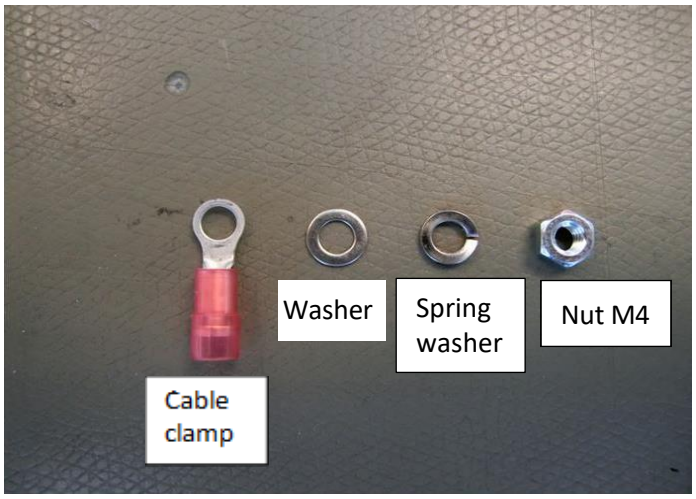


Figure 13: Assembly of the protection ground terminal

Put together the cable clamp, the washer and the spring washer. Then tighten the M4 screw.

4.7.1 Grounding Methods

To avoid electrostatic damage, observe the following grounding guidelines:

1. Cover workstations with approved antistatic material. Always wear a wrist strap connected to the workplace. Always use properly grounded tools and equipment.
2. Use antistatic mats, antistatic wristband, heel straps, or air ionizers for more protection.
3. Always handle electrostatically sensitive components by their edge or by their casing.
4. Avoid contact with pins, leads, or circuitry.
5. Switch off power and input signals before inserting and removing connectors or connecting test equipment.
6. Keep work area free of non-conductive materials such as ordinary plastic assembly aids and Styrofoam.
7. Use only field service tools that are conductive, such as cutters, screwdrivers, and vacuum cleaners.
8. Always place any boards PCB-assembly-side down on a grounded conductive base.

4.7.2 Lightning Protection Requirements

The protection of communication system against high-energy surges requires a low-impedance ground connection.

Once a communication system has been grounded, check the low-impedance ground connection of the system using the ground conductor of the mains power supply circuit and the low-impedance connection (of the additional permanently connected protective ground conductor) to the building's potential equalization bus.

NOTICE **Fire hazard due to surge voltage!**

Telecom lines which are over 500m in length or are outside the building should be conducted through an additional external lightning protection.

Lightning protection of this kind is known as additional primary protection. The additional primary protection is guaranteed by the professional installation of ÜSAGs (surge arresters, gas filled) in the main distribution frame, the patch panel or at the entry point of the pipe in the building. A gas-filled surge arrester with 230 V nominal voltage is switched to ground from each wire that is to be protected.

Without this additional primary protection, lightning could irreparably damage the telecom boards. This can cause the entire communication system to fail or result in components overheating (fire hazard).

4.8 Power Supply safety

The communication system has been approved for connection to TN-S power supply systems. They can also be connected to a TN-C-S power supply system in which the PEN conductor is divided into a ground wire and a neutral wire. TN-S and TN-C-S systems are defined in the IEC 60364-1 and IEC60364-5-51 standard.

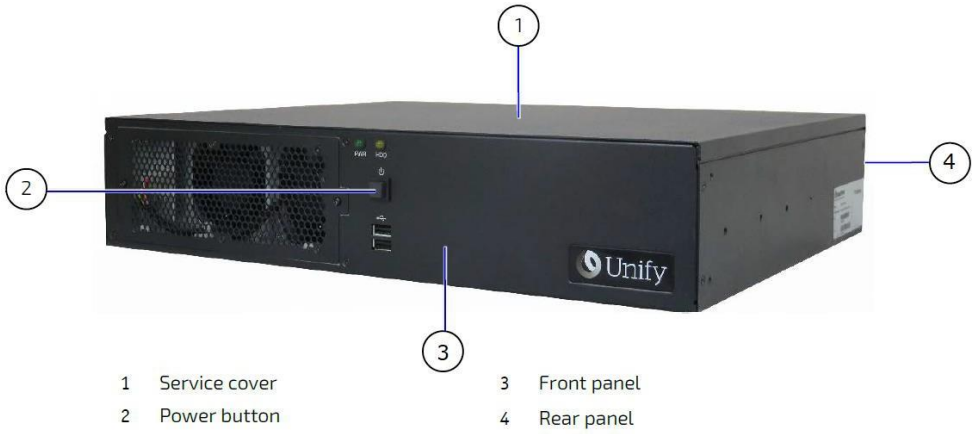
DANGER **Risk of electric shock through contact with live wires!**

Only qualified electricians should perform any work that may be required on the low-voltage network. These installation activities to connect the communication system must be performed in compliance with IEC 60364-1 and IEC 60364-4-41 or any corresponding legal norms or national regulations.

4.8.1. Immobilizing the Power Supply's Alarm Functionality

As soon as an error occurs (e.g., an AC access fails or is not connected, a module is pulled etc.) the OSB 550 HA alarm is triggered. Hardware jumpers can be set to permanently silence/disable the PSU failure alarm. In case of an error, the alarm is still sent to the OSB software which raises the alarm in the management user interface.

Figure 14: OSB 550 HA



WARNING **Energy hazards present**

Before removing the service cover, shut down the Unify System properly using the power button and disconnect the power cable from the rear panel power supply or mains power outlet.

ESD Sensitive Device

Electronic components are sensitive to static electricity. Therefore, care must be taken during all handling operations and inspections. A sudden discharge of electrostatic electricity can destroy static-sensitive devices.

To immobilize the power supply alarm, perform the following:

1. Switch off and disconnect the Unify System from the mains power supply.
2. Loosen the service cover's three knuckled screws on the rear panel (Figure 15).

Figure 15: Rear side Knurled Screws

3. Pull the service cover out slightly (Figure 16), to release the service cover from front panel.

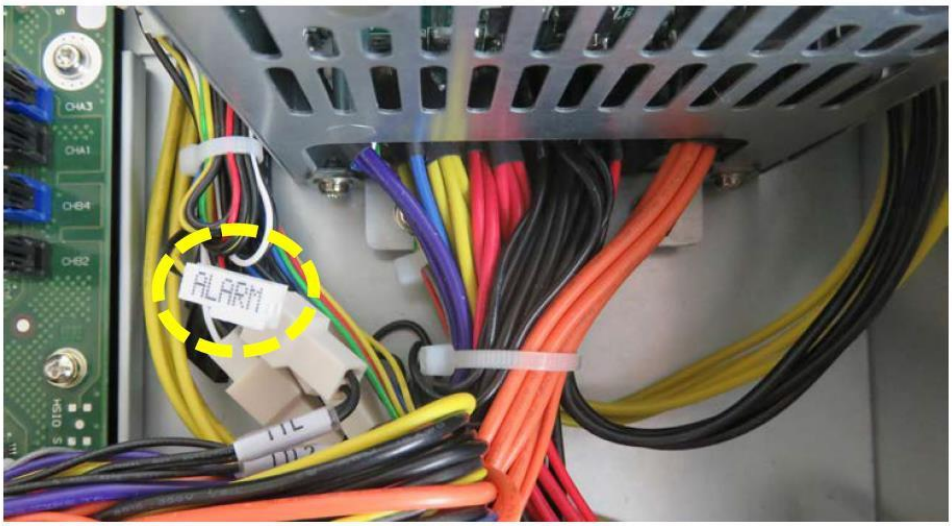
Figure 16: Pull to Release the Service Cover

4. Lift the service cover up on the rear edge, to remove the service cover (Figure 17).

Figure 17: Removing the Service Cover

5. Locate the alarm cable with alarm connector, next to the power supply (Figure 18).

Figure 18: Alarm Connector



6. Insert the bridge (Figure 19) firmly onto the Power Supply's alarm connector (Figure 20).

Figure 19: Bridge

Figure 20: Alarm Connector with Bridge

To test if the cable is installed properly, unplug mains-cable from one of the PSUs. If the acoustical alarm is activated (is very loud), then the installation was wrong.

1. Close and secure the service cover by proceeding in the reverse order (steps 4 to 2).

WARNING Close and secure properly by using all three knurled screws on the real panel.

4.9 Thermal Considerations

Active Cooling

The OpenScape Branch 550 / 550HA is air-cooled using two internal system fans that force air to flow from the front to the back of the chassis. The processor and expansion cards have integrated cooling solutions or are equipped with corresponding cooling devices.

Temperature Sensor

The temperature conditions of the product (depending on the environmental temperature and the load) are detected by two internal temperature sensors (one at the rear and one near the fan assembly) that control the speed of the system fans within the fan assembly.

4.10 Connecting telecom lines and analog phones

Different types of telecom lines and analog phones can be connected to the OpenScape Branch 550 / 550HA. The connection is made directly at the board. Take into consideration the Safety Instructions.

⚠WARNING Risk of electric shock through contact with live wires!

Use separate ground wires to provide protective grounding (PE) for your communication system and any main distribution frames used before connecting telephones and lines.

⚠CAUTION Fire hazard!

To reduce the risk of fire, you may only use communication cables with a conductor diameter of at least 0.4mm (AWG 26) or larger.

NOTICE Fire hazard due to surge voltage!

In case of line lengths exceeding 500 m and where the lines exit the building, the OSB550 / 550HA should be protected by external lightning protection.

Lightning protection of this kind is known as additional primary protection. The additional primary protection is guaranteed by installing ÜSAGs (surge arresters, gas filled) in the patch panel or at the entry point of the pipe in the building. A gas-filled surge arrester with 230 V nominal voltage is switched to ground from each wire that is to be protected.

5 Installation procedures

The OpenScape Branch 550 / 550HA is designed for horizontal installation in a 19” industrial rack cabinet. Vertical operation is possible.

Before installing, read the installation instructions in this chapter and observe the information included in 3.1 General Safety Instructions. Due to possible access restrictions, Unify Software and Solutions GmbH & Co. KG. KG recommends connecting all peripherals to the corresponding system ports and installing any expansion cards before installing it in the end environment.

⚠WARNING The product must be installed only by trained personnel aware of the associated dangers.

⚠WARNING **Ensure Sufficient Airflow**

Ensure the OpenScape Branch 550 /550HA is well ventilated and does not prevent the product from taking in air at the front or exhausting air at the rear.

⚠WARNING Do not place the product close to heat sources and to damp or dusty places.

⚠CAUTION Before connecting any I/O cables, ensure that protective grounding (PE) is connected, the product is switched off and the power cable is disconnected connected from the power connector or mains power.

⚠CAUTION When connecting cables, follow the proper cabling procedures:

1. Grounding pin is connected first and disconnected last.
2. Connect all I/O cables.
3. Power connection is the last connection.

5.1 Rack installation

There are two methods to install in a 19’’ industrial Rack:

1. Fixed mount (handle brackets installation)
2. Sliding mount (slide rails or L brackets installation)

NOTE: Slide Rails are NOT included in the product delivery and can be ordered as a separate option (see Table 2: Accessories). To install in a 19” industrial rack with the second method, please follow the detailed installation instructions included in the Rack Slide Rails Kit.

Before installing the OpenScape Branch 550 / 550HA, observe the following instructions and those given in 3. Safety Instructions.

⚠WARNING Install only in a stable 19" industrial rack cabinet. To improve stability:

- Place system from the bottom up to install all components correctly and in the proper order.
- Distribute weight evenly. Place heavy equipment or components at the bottom of the cabinet to improve the balance.
- Secure the cabinet to the floor or anchor the cabinet to the wall to prevent it from tipping over or moving during use.

⚠WARNING **Ensure Sufficient Airflow**

Ensure that the 19” Industrial rack cabinet is well ventilated and does not prevent the OpenScape Branch 550 / 550HA from taking in air at the front and exhausting air at the rear.

⚠CAUTION Installing the OpenScape Branch 550 / 550HA alone can result in product damage or personal injury.

5.1.1 Installing Handle Brackets

To install the handle brackets (see Figure 4: Handle bracket) onto the sides of the OSB 550/550HA, proceed as follows:

1. Identify the mounting points where the handle brackets should be located.
2. Firmly attach the handle brackets to the mounting points by using the appropriate screws and hardware. Tighten the screws in an appropriate way by avoiding to tight them too much or letting them too loose.
3. Verify that the handle brackets are securely mounted and do not move or shift.

5.1.2 Installing the Slide Rails (Optional)

Slide Rails are not included in the product delivery and can be ordered as a separate option.

The installation of the OSB 550 / 550HA platform must be carried out only by qualified personnel familiar with the associated dangers. Please note the safety precautions and the detailed instructions regarding slide rails installation (KISS 2U system) included in the Slide Rails Kit. For more information, see Table 2: Accessories.

WARNING During the mounting procedure into a 19" industrial cabinet the OSB 550 / 550HA system must be powered down and the power cord must be disconnected from the power source. Disconnect all peripherals.

Preparing the Slide Rails

1. Remove the inner part of the telescopic rail by releasing the locking lever and pulling out the inner part of the slide rail. See Figure 13: Separating the inner rail (shown as a left side of the slide rail).
2. Attach the removed inner part of the slide rail to the chassis of the OSB 550 / 550HA with the supplied Philips screws 6x M4x6.
3. Repeat steps 1 and 2 for the right side.

Figure 21: Separating the inner rail (shown as a left side of the slide rail)

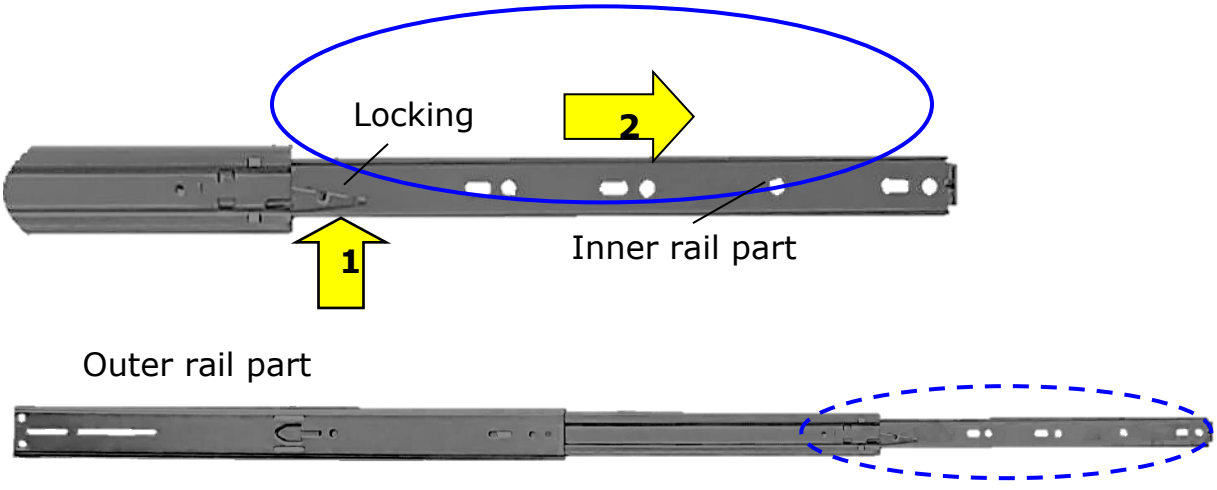
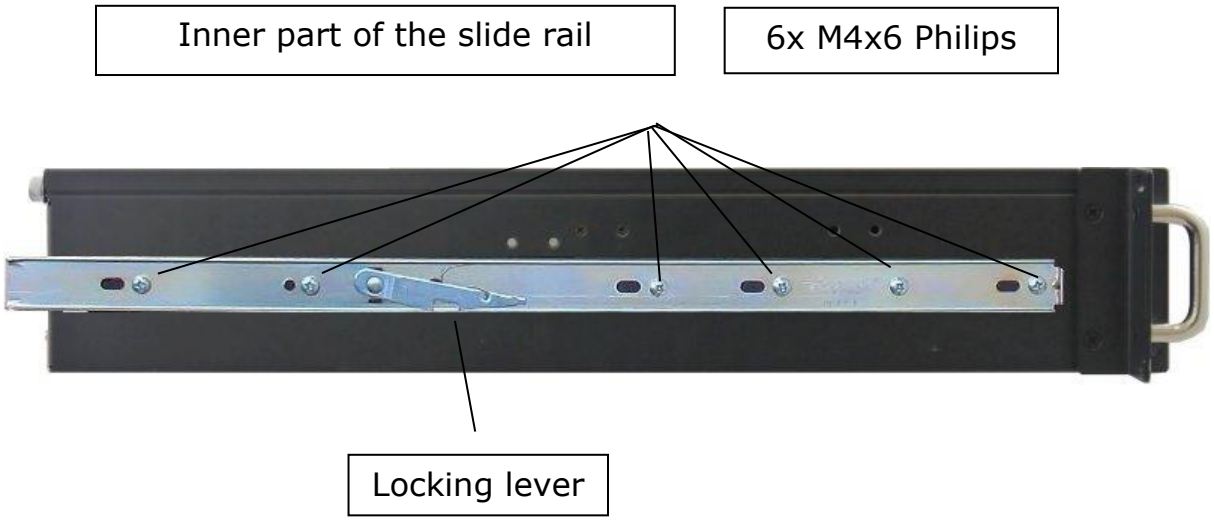


Figure 22: Attached inner part of the slide rail (left side view)



NOTE: To release the locking levers after attaching the inner slide rails to the OSB 550 / 550HA, push the left and the right locking lever in opposite directions.

Mounting into the Rack

Prerequisite: Prepare the slide rails as described in 6.3.1 Preparing the Slide Rails.

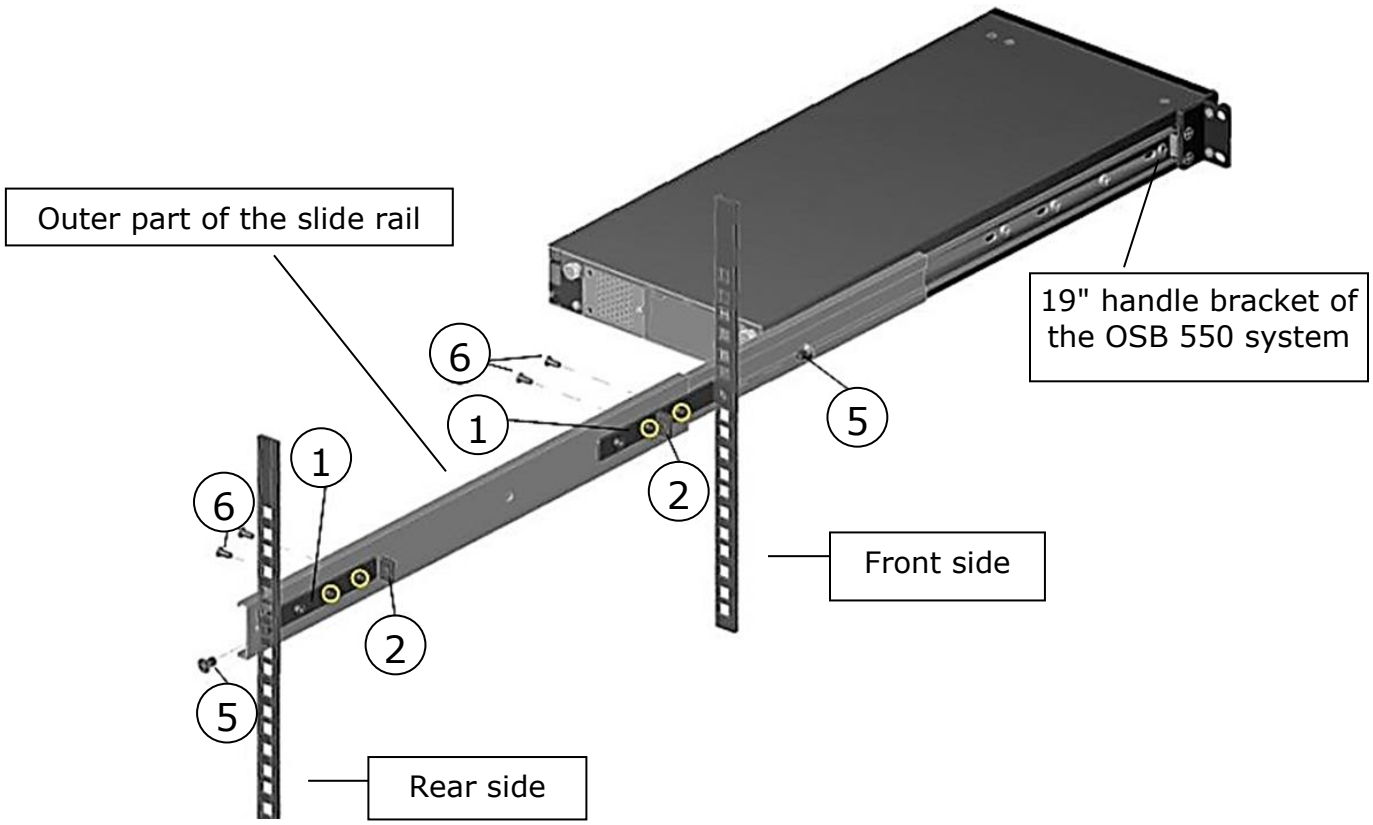
1. Attach the slide rails to the front and rear side posts of the 19" industrial cabinet.

   Refer to figure 15 for the following components:

   - four pcs. rack mounting bracket (3)
   - four plates with 2x M6 threaded holes (4)
   - 4x 2 countersunk head screw M6x10 (5)
2. Ensure that the mounting brackets are mounted at the same vertical position on all posts of the 19" industrial cabinet.
3. Mount the outer part of the slide rail to the front and then to the rear side of the 19" industrial cabinet, by using each of the two countersunk head screws (M4x10) (6).

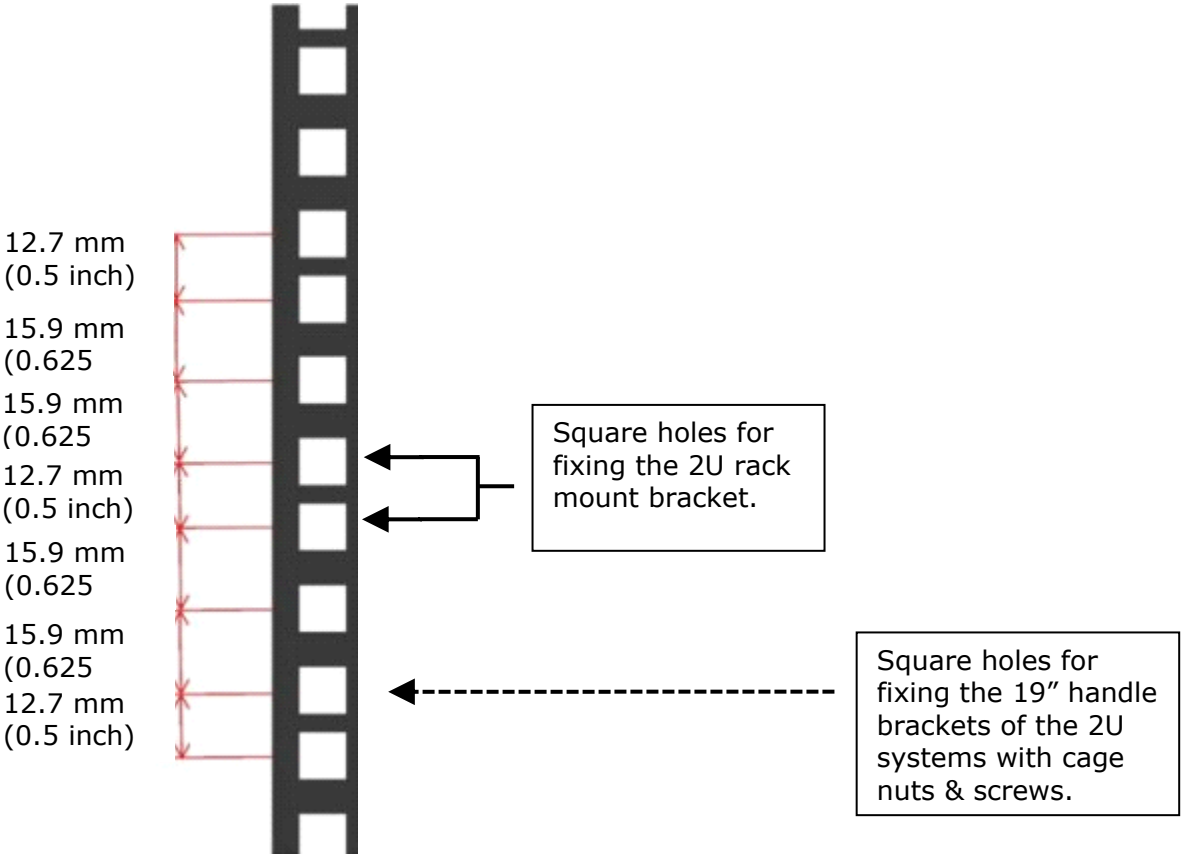
   Please use for mounting the marked threaded holes of the OSB 550 / 550HA rack mounting brackets (see Figure 15: OSB 550 / 550HA with rack slide rails kit (left side view).

Figure 23: OSB 550 / 550HA with rack slide rails kit (left side view)



4. Slide the OSB 550 / 550HA (with attached inner parts of the slide rails) into outer parts of the slide rails mounted to the left and right side of 19" industrial cabinet until it stops (clicking sound is audible). During insertion, the locking lever must be unlocked. To unlock the locking lever push it up on the left side and push it downwards on the right side (see Figure 13: Separating the inner rail (shown as a left side of the slide rail).
5. Secure the 19" handle bracket of OSB 550 / 550HA to the front side posts of the 19" industrial cabinet with four cage nuts and screws (not included in shipment).
6. Test the equipment to make sure it is securely installed and functioning properly.

Figure 24: Rack vertical rail (post) with square holes: Spacing for mounting the 2U system.



5.2 Desktop installation

Before installing the OpenScape Branch 550 /550HA in a desktop environment, install the rubber feet as described in the instructions below, to avoid scratching the installation surface. Additionally, observe the general instructions and any safety warnings within 3. Safety Instructions.

⚠WARNING The voltage feeds must not be overloaded

Adjust the cabling and the external overcharge protection to correspond with the electrical data indicated on the type of label located on right side of the chassis.

⚠WARNING Ensure Sufficient Air Flow

Ensure that nothing obstructs the OpenScape Branch 550 / 550HA from taking in air at the front or exhausting air at the rear.

Follow the instructions below to install the supplied four rubber feet:

1. Switch off and disconnect the product from the mains power supply.
2. Disconnect all peripherals.
3. Ensure that all components are securely installed.
4. Turn the chassis upside down (Orientation: bottom side facing upwards) and identify the location where the four rubber feet are to be installed.
5. Take one of the rubber feet and remove the protective film.
6. Attach the rubber foot at the right place to the bottom side of the chassis, making sure it is firmly attached to the surface.
7. Repeat steps 4-5 for the remaining rubber feet.
8. Turn the chassis the right way around (Orientation: cover facing upwards).
9. Test the device on a flat surface to ensure that the rubber feet have been installed correctly and provide stability.

5.4 Installation and connection of external parts

5.4.1 Installing Clip-On Ferrites

Ferrites are needed for the OSB 550/550HA A44, OSB 550/550HA DP14, OSB 550/550HA DP24 and OSB 550/550HA-D44 variants. Ferrites must be installed on FXS and FXO lines.

1. Identify the cables that you want to install the clip-on ferrites on.
2. Open the clip and loop up to 4 cables per ferrite. Make sure each cable is passing through the ferrite core twice.
3. Close the clip around the cable without jamming a cable.

The ferrite must be totally closed. It should not be visible to see through the opening. The ferrite must be installed about 10cm (4 inches) from the connectors of the OSB 550 / 550HA variants.

5.4.2 Installing and Removing Low Profile Expansion Cards

To **install** low profile expansion cards (Table 8: Low Profile cards slots), proceed as follows:

WARNING Observe the Safety Instructions and 3.5 Accessing Internal Components within this user guide.

1. Switch off and disconnect the product from the mains power supply.
2. Remove the cover to expose the motherboard.
3. Remove the slot bracket's fasten screw. Retain the slot bracket with screw for later use.
4. Insert the low profile expansion card into the respective expansion card slot.
5. Secure the expansion card in place with the fastening screw (Figure 12, pos. 6).
6. Replace the cover.

To **remove** low profile expansion cards (Table 8: Low Profile cards slots), proceed as follows:

1. Unscrew the expansion card's screw (Figure 12, pos. 6).
2. Remove the low profile expansion card from the respective expansion card slot on the mainboard. Store the expansion card with screw for possible later use.
3. Insert a slot bracket into the empty expansion card slot on the rear side of the chassis.
4. Secure the slot bracket by fastening the slot bracket screw (Figure 12, pos. 6).

5.4.3 Installing and Removing a M.2 SSD Module

To install an M.2 SSD module on the motherboard, perform the following:

1. Locate the M.2 socket and the corresponding nut on the motherboard.
2. Insert and push the M.2 module into the M.2 socket gently and at a slight angle, until the M.2 module's fixing hole aligns with the corresponding motherboard's nut.
3. Secure the M.2 module by pressing down on the M.2 module's free end and carefully fixing the M.2 module with screw to the corresponding nut on the motherboard, until the M.2 module lies flat and parallel with the motherboard.

NOTICE Do not use force when fastening the mounting screw. Too much force may damage the motherboard nut.

To **remove** a M.2 SSD module from the motherboard, perform the following:

1. Locate the installed M.2 module. Loosen and remove the M.2 module's fixing screw. The M.2 module springs up at the free end.
2. Pull the M.2 module carefully out of the M.2 socket.

After installing or removing a M.2 SSD module, memory partitioning may be different.

WARNING Make sure that the product is switched off using the power button and disconnected from the mains power supply.

Disconnect all connected peripheral devices. Observe the General Safety Instructions within this user guide.

CAUTION Handling and operation of the product is permitted only for trained personnel aware of the associated dangers, within a workplace that is access controlled and fulfills all necessary technical and environmental requirements.

Follow the electrostatic discharge (ESD) precautions for components that are sensitive to ESD and use a clean, flat and ESD-safe surface when handling the product. Failure to observe this warning notice may result in damage to the product or/and internal components (see 3.6 Electrostatic Discharge).

5.4.4 Connecting an HDMI monitor

Follow the instructions below to connect an HDMI monitor to OSB 550/550 HA. Take notice of the General Safety Instructions before beginning the actions.

1. Turn off the OSB 550 /550 HA device and the monitor.
2. Locate the HDMI port on the OSB 550 / 550 HA device and the monitor.
3. Plug one end of the HDMI cable into the HDMI port on your device and the other end into the HDMI port on your monitor.
4. Turn on both the OSB 550 / 550 HA device and the monitor.
5. If needed, adjust the display settings on your device to output to the HDMI port.

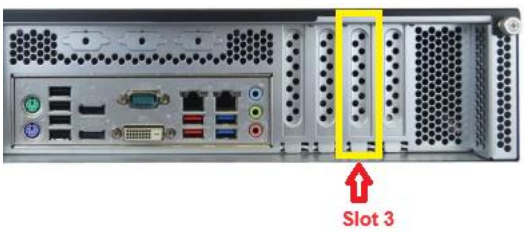
5.4.5 Connecting a NIC card

It is possible to add an additional NIC card (S30122-X8004-X57) for bonding on OSB 550/550HA.

Figure 25: NIC card

IMPORTANT: NIC card can be connected ONLY on slot 3.

Figure 26: Slot 3 on OSB 550/550HA



NOTE: NIC card must be connected to the system ONLY when OSB is already running with V10R3 or higher. If system is running with a previous release, first upgrade to V10R3 or higher and then, when the system is already running with V10R3 or higher, connect the NIC card.

6 Powering up the OSB 550/550HA

The input power socket is located on the rear side. To connect the power and start up, proceed as follows:

1. Connect the ends of the supplied AC power cable to the corresponding sockets:
   - Input power socket.
   - Mains power supply socket using the electrical plug for the region.

Figure 27: Input power socket – single AC power

Figure 28: Input power socket – Redundant AC Power Supply

2. Press the power button. The power LED illuminates green.

NOTICE Do not disconnect the power from the product while the product is powered up! Performing a forced shut down can lead to loss of data or other undesirable effect!

Before starting up observe the instructions in 3. Safety Information and read the warnings in this chapter.

⚠WARNING Easy Access to Power Cable and Power Connectors

The power cables must always remain easily accessible. If the end environment restricts access to power cable, disconnection must be guaranteed using a separate cut-off fixture.

⚠WARNING Energy hazards-110/240 VA present in the chassis

To switch off the product properly and ensure no energized internal parts, switch off the product using the power switch on the front side and disconnecting all product's power cable from the input power socket or the mains power supply.

⚠CAUTION Ensure that the mains power supply sockets (power outlets) are properly grounded, and the power cables are in perfect condition with no visible damage.

⚠CAUTION The rated mains voltage range must agree with the voltage specified on the type label.

7. Maintenance, Storage and Transportation

Maintenance

Unify Software and Solutions GmbH & Co. KG systems only require minimal maintenance and care to maintain correct operation.

- Wipe the product with a soft dry cloth if required.
- Remove persistent dirt using a soft, slightly damp cloth (only use a mild detergent).

Storage

If the product is not in use for an extended period time, disconnect the power plug from the mains power source. If it is necessary to store the product, then re-pack the product as originally delivered to avoid damage. The storage facility must meet the products environmental storage requirements as stated within this guide. Unify Software and Solutions GmbH & Co. KG recommends keeping the original packaging material for future storage or warranty shipments. It is also highly recommended to back up the system to prevent data loss.

Transportation

To ship the product, use the original packaging, designed to withstand impact, and adequately protect the product. When packing or unpacking products always take shock and ESD protection into consideration and use an ESD safe working area.

7.1 Replacing the Fan Assembly

Before replacing the fan assembly, observe the Safety Instructions.

To replace the fan assembly, proceed as follows:

1. Loosen the two knurled screws on the fan assembly (Figure 29, pos. 2).
2. Pull out the fan assembly to disconnect it from the internal fan control socket.
3. Lift the fan assembly upwards as shown (Figure 29) to remove from the fan compartment.
4. To replace with a new functional fan assembly, align the fan assembly with the fan compartment.
5. Push the fan assembly carefully into the fan compartment until the fan assembly's control connector is firmly inserted into the internal fan power control socket.
6. Secure by fastening the knurled screws of the fan assembly (Figure 29, pos. 2).

Figure 29: Removing the fan assembly

7. Fan assembly

8. Two knurled screws

⚠CAUTION Operation is permitted only with a functional fan assembly!

Replace a defective fan assemble only with an original fan assembly.

⚠CAUTION Fan assembly replaceable during operation

Replace fan only by qualified personnel or a suitably instructed persons aware of the associated dangers. Before removing the fan assembly, wait until the fans have totally stopped. Keep hands and fingers away from rotating fan parts.

8. Quality and Environmental Management

Unify Software and Solutions GmbH & Co. KG aims to deliver reliable high-end products designed and built for quality, and to comply with environmental laws, regulations, and other environmentally oriented requirements.

Unify Software and Solutions GmbH & Co. KG is certified for its Quality Management System according to ISO9001 and for its Environmental Management System according to ISO 14001.

8.1 Disposal and Recycling

Products by Unify Software and Solutions GmbH & Co. KG are manufactured to satisfy environmental protection requirements where possible. Many of the components used are capable of being recycled. Final disposal of this product after its service life must be accomplished in accordance with applicable country, state, or local laws or regulations.

8.2 WEEE Compliance

The Waste Electrical and Electronic Equipment (WEEE) Directive aims to:

- Reduce waste arising from electrical and electronic equipment (EEE)
- Make producers of EEE responsible for the environmental impact of their products, especially when the product becomes waste.
- Encourage separate collection and subsequent treatment, reuse, recovery, recycling, and sound environmental disposal of EEE.
- Improve the environmental performance of all those involved during the lifecycle of EEE.

All electrical and electronic products should be disposed of separately from the municipal waste stream via designated collection facilities appointed by the government or the local authorities. The correct disposal and separate collection of your old appliance will help prevent potential negative consequences for the environment and human health. It is a precondition for reuse and recycling of used electrical and electronic equipment. For more detailed information about disposal of your old appliance, please contact your city office, waste disposal service, the shop where you purchased the product or your sales representative. The statements quoted above are only fully valid for equipment which is installed and sold in the countries of the European Union and is covered by the directive 2012/19/EU. Countries outside the European Union may have other regulations regarding the disposal of electrical and electronic equipment.

8.3 Marking

Hereby, the manufacturer declares that the OpenScape Branch 550 and OpenScape Branch 550HA are in compliance with EU Directives 2014/30/EU, 2014/35/EU and 2011/65/EU as well as the UK Electrical Equipment (Safety) Regulations 2016, UK Electromagnetic Compatibility Regulations 2016 and UK RoHS Regulations 2012.

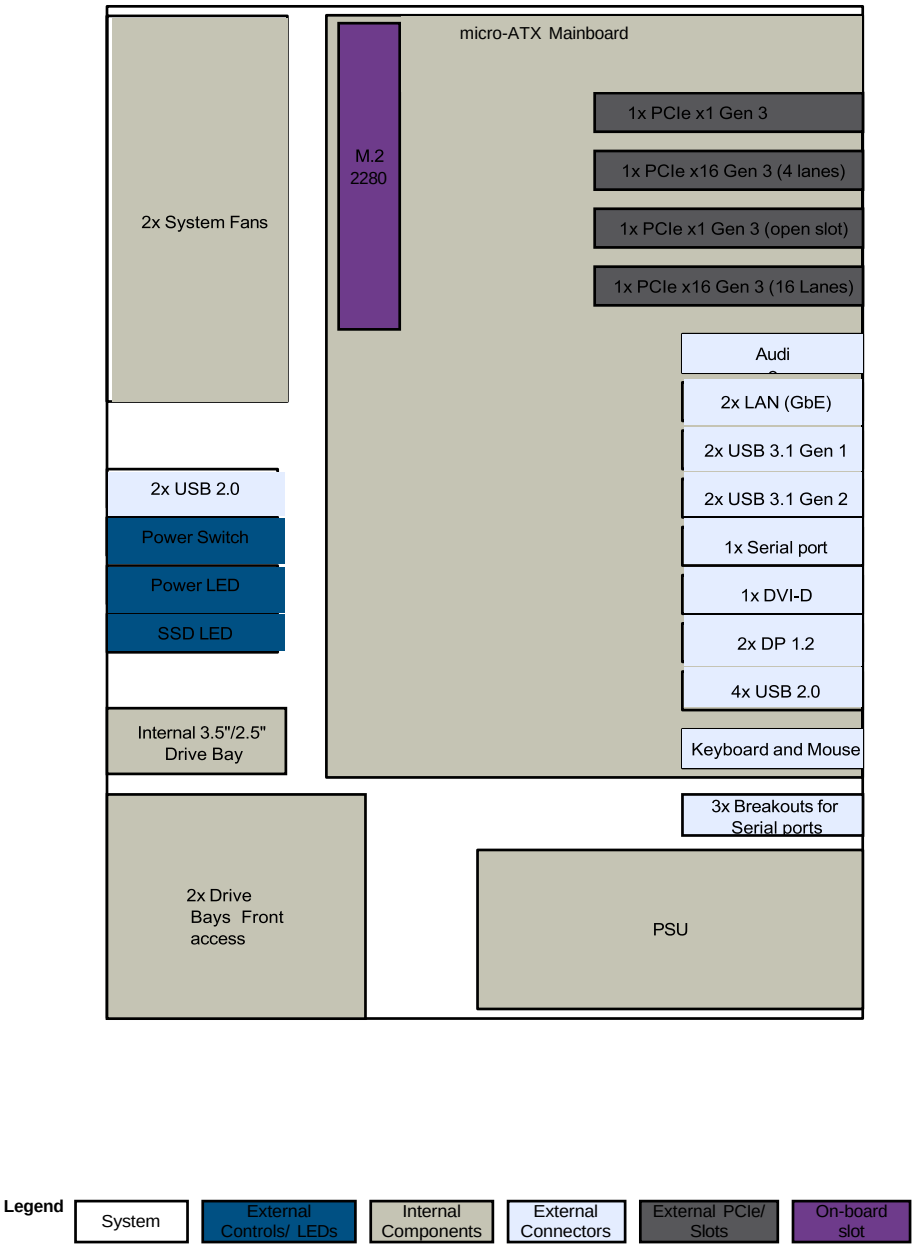
The full text of the EU and UK declarations of conformity are available under the subdirectory "Declarations of Conformity" at the following internet address: http://wiki.unify.com

9.Technical Data

This chapter lists the main OpenScape Branch 550 / 550HA technical specifications.

9.1 Block Diagrams

Figure 30: Block diagram OpenScape Branch 550 / 550HA Low Profile- KISS 2U Short V3 CFL Low Profile

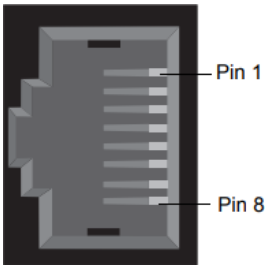


9.2 Standard Interfaces

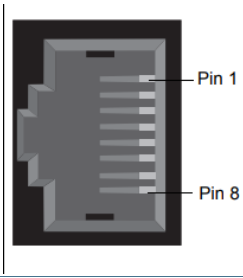
Table 9: Part number information for the OSB 550 cards

MPN Sangoma	Interfaces	Unify Part Number
4A4B05F-13	4 FXS ports	S30122-X8004-X51
4A4B02F-13	4 FXO ports	S30122-X8004-X52
4TE235BF-13	2 E1/T1 PRI ports	S30122-X8004-X53
4TE131F-13	1 E1/T1 PRI port	S30122-X8004-X54
4B433LF-13	4 BRI ports	S30122-X8004-X55
4TE435BF-13	4 E1/T1 PRI ports	S30122-X8004-X56

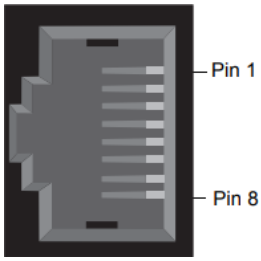
Sangoma card: TE130 Series TE131/TE132/TE133/TE134

Pin	Signal Name	Connector
1	Rx	RJ45 Telco Port Connector 
2	Rx	
3	Not used	
4	Tx	
5	Tx	
6	Not used	
7	Not used	
8	Not used	

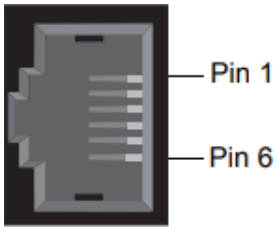
Sangoma card: TE430 Series TE435B/TE435/TE436B/TE4364

Pin	Signal Name	Connector
1	Rx	RJ45 Telco Port Connector 
2	Rx	
3	Not used	
4	Tx	
5	Tx	
6	Not used	
7	Not used	
8	Not used	

Sangoma card: TE230 Series TE235B/TE235/TE236B/TE236

Pin	Signal Name	Connector
1	Rx	RJ45 Telco Port Connector 
2	Rx	
3	Not used	
4	Tx	
5	Tx	
6	Not used	
7	Not used	
8	Not used	

Sangoma card: A4A / A4B

Pin	Signal Name	Connector
1	Not used	RJ11 Telco Port Connector 
2	Not used	
3	Tip	
4	Ring	
5	Not used	
6	Not used	

Details about the part numbers of Sangoma cards:

- 4FXS: 4-port analog, PCI Express card, contains one 5A4BLF-C base module and four 5S110MLF-E1 sub-modules defines as the A4B and S110M respectively.
  - Unify internal code: S30122-X8004-X51
  - Product code: 4A4B05F-13

- 4FXO: 4-analog line ports, PCI Express card, contains one 5A4BLF-C base module and four 5X100MLF-E1 sub-modules defined as the A4B and X100M respectively.
  - Unify internal code: S30122-X8004-X52
  - Product code: 4A4B02F-13

- 2PRI: 2-ports E1/T1 PRI, PCI Express card, contains one 5TE235F-B base module and one 5VPM064LF-B sub-module defined as the TE235 and VPM064 respectively.
  - Unify internal code: S30122-X8004-X53
  - Product code: 4TE235BF-13

- 1PRI: 1-port E1/T1 PRI, PCI Express card, is based 1TE131F-D module defined as the TE131
  - Unify internal code: S30122-X8004-X54
  - Product code: 4TE131F-13

- 4BRI: 4-ports BRI, PCI Express card, contains one 5B433LF-D base module defined as the B433
  - Unify internal code: S30122-X8004-X55
  - Product code: 4B433LF-13

- 4PRI: 4-ports E1/T1 PRI, PCI Express card, contains one 5TE435F-B base module and one 5VPM128LF-B sub-module defined as the TE435 and VPM128 respectively.
  - Unify internal code: S30122-X8004-X56
  - Product code: 4TE435BF-13

9.3 Environmental Specification

Temperature		Description
Temperature	Operating	0 °C to +50 °C (+50°F to +122 °F)
	Storage & Transit	-20°C to +70°C (-4°F to +158°F)
Relative Humidity	Operating and Storage & Transit	10-93 % @ 40° C, non condensing
Environment		Description
Altitude	Operating	5,000 m (16,400 ft.) Max.
	Storage & Transit	10,000 m (32,810 ft.) Max.
Shock	Operating	15 g, 11 ms, duration
	Storage & Transit	30 g., 11 ms, duration

Temperature		Description
Temperature	Operating	0 °C to +50 °C (+50°F to +122 °F)
	Storage & Transit	-20°C to +70°C (-4°F to +158°F)
Relative Humidity	Operating and Storage & Transit	10-93 % @ 40° C, non condensing
Environment		Description
Vibration	Operating	10 Hz – 150 Hz, 1.0 g, 3 axis
	Storage & Transit	10 Hz – 150 Hz, 2.0 g, 3 axis
MTBF		50,000h @ 30°C (min. configuration)

9.4 CE Directives and Standards

The manufacturer complies with the European Council Directive and the approximation of the laws of the member states. If modified, the prerequisites for specific approvals may no longer apply.

Unify Software and Solutions GmbH & Co. KG is not responsible for any radio television interference caused by unauthorized modifications of the product or the substitution or attachment of connecting cables and equipment other than those specified by manufacturer. The correction of interference caused by such unauthorized modification, substitution or attachment will be the responsibility of the operator.

CE			
Safety			
		Low Voltage Directive (LVD)	2014/35/EU
Electromagnetic Compatibility		Electromagnetic Compatibility Directive (EMC)	2014/30/EU
EMC			
Emission (Class B)	EN 55032/ CISPR 32	Electromagnetic compatibility of multimedia equipment- Emission requirements	
	EN 61000-6-3	Emission standard for residential, commercial and light-industrial environments	
Immunity (Industrial Equipment)	EN 55035 / CISPR 35	Information technology equipment- Immunity characteristics	
	EN6100-6-2	Immunity for industrial environments	
Safety			
Europe	EN 62368-1	Audio/video, information and communication technology equipment – Safety requirements	
CB Scheme	CB Report - IEC 62368-1		
Environment			
WEEE	Compliant with the Waste Electrical and Electronic Equipment (WEEE) 2012/19/EU directive; to reduce waste of electrical and electronic equipment, encourage recycling and environmental disposal and increase the environmental awareness of producers		
Environment			

RoHS II	Compliant with the Restriction of Hazardous Substances (RoHS) 2011/65/EU directive or the latest status thereof, to reduce hazardous substances in electrical and electronic equipment

mitel.com