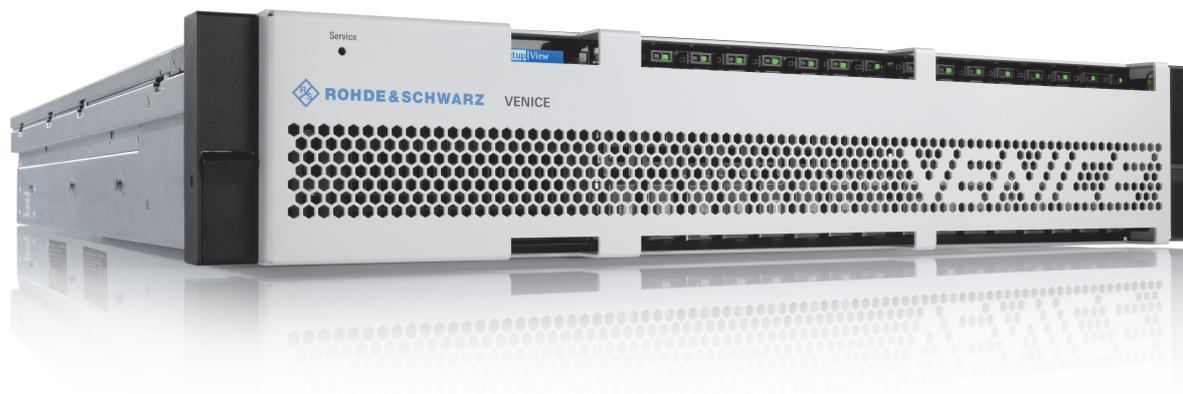


# R&S<sup>®</sup> VENICE S

## User Manual



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Subject to change – Data without tolerance limits is not binding.



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# General

This chapter includes the following section:

- "About this Documentation" (page 8)



## About this Documentation

This documentation informs you about the installation of the VENICE S hardware, a video server system by Rohde & Schwarz, its operation as well as all connection possibilities. Furthermore, it describes maintenance tasks that you may carry out on your own.

### Required Reading

Each person who is responsible for installation, operation, maintenance or setting of the system has to read and understand this manual.

### Target Group

To use this manual you should have experience in handling video and computer equipment.

When performing maintenance tasks on the hardware, you must be qualified to work on, repair and test electrical equipment.

### Additional Documentation

Following documents have to be heeded while working with VENICE S:

- Getting Started With Your System
- Data Sheet
- Safety, Environment and Regulatory Information
- Software Integration Guide
- Supported File Formats for Software Version 3.5
- Supported File Formats for Software Version 4

The complete documentation can be downloaded from <https://gloris.rohde-schwarz.com> after registering/logging in to access restricted information. There you may find updated manuals and further information as well.



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# Safety

This chapter is divided into the following sections:

- "For your Safety" (page 10)
- "General Notes" (page 11)



## For your Safety

The product documentation helps you to use VENICE S safely and efficiently. Keep the product documentation in a safe place and pass it on to the subsequent users. Use VENICE S only in its designated purpose as described in the product documentation. Observe the performance limits and operating conditions stated in the specification (data sheet).

Safety information is part of the product documentation. It warns you about the potential dangers and gives instructions how to prevent personal injury or damage caused by dangerous situations.

Safety information is provided as follows:

- In the "Basic Safety Instructions", safety issues are grouped according to subjects.
- Throughout the documentation, safety instructions are provided when you must pay attention during setup or operation.

Always read the safety instructions carefully. Make sure to fully comply with them. Do not take risks and do not underestimate the potential danger of small details such as a damaged power cable.

## General Notes

Please observe the following general important notes:

- Computer hardware contains components that are sensitive to electrostatic discharge. If you touch them without precautionary measures, they can be destroyed. Use a wrist strap connected to ground when accessing electronic parts and take care of grounding the system. Avoid touching the internal components of VENICE S whenever possible.
- Performance Loss:  
VENICE S has been delivered to you fully preconfigured and optimized for a real-time in- and output of video streams. Changing any of the settings (e.g. the hardware, software and/or BIOS settings) may lead to a loss of performance or may even render the system unusable. Re-configuring VENICE S anew in most cases is a lengthy procedure. Modifications of settings i.e. BIOS settings shall be done with Rohde & Schwarz.
- Third-party Software:  
VENICE is built for the most demanding realtime operations. Third-party software might have unpredictable influences to the overall performance and stability of the system. Do not install any third-party software that has not been tested and approved by Rohde & Schwarz on your system.
- Real-time performance:  
Use only the optional internal storage or external storage solutions which are tested and released by Rohde & Schwarz to store video and audio data. Other storage locations and solutions will be too slow for real-time operations.
- Storage capacity exceeded:  
In case of a full storage performance losses may occur. Leave about 10 to 15 % of the overall main storage capacity empty of data for performance reasons.
- It is recommended to set up an e-mail notification, to ensure you get informed when a hardware malfunction occurs.





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# Product Description

This chapter is divided into the following sections:

- "Function" (page 14)
- "Models" (page 15)
- "Features" (page 16)
- "Type Plate" (page 28)
- "Scope of Delivery" (page 29)
- "The Front of the System" (page 30)
- "The Rear of the System" (page 38)
- "Inside the System" (page 49)
- "Pin Assignment" (page 53)
- "Network Ports" (page 60)



## Function

VENICE S is a media server especially designed for studio production as well as channel playout. It offers ingest, playout and transforming functions in one single box. The open software structure allows to combine video and IT workflows in broadcast environments.

In playout mode VENICE S assumes the role of a player. For a remote controlled playout set VENICE S in VDCP or MOS mode via VENICE web service or the R&S<sup>®</sup>Device Manager.

In ingest mode VENICE S assumes the role of a recorder. For a remote controlled ingest set VENICE S in FIMS or VDCP mode via VENICE web service or the R&S<sup>®</sup>Device Manager.

In transform mode VENICE S transforms video and audio material to different file formats. If possible, the file conversion (transcoding) will be performed in hardware at a faster render speed. For a remote controlled transform set VENICE S in FIMS mode via VENICE web service or the R&S<sup>®</sup>Device Manager.

For more information about the integration of VENICE S by VDCP, MOS, FIMS and the VENICE web service please see the Software Integration Guide, available at:  
**<https://gloris.rohde-schwarz.com>**.



## Models

The following models are available:

- VENICE S400 (no internal media storage)
- VENICE S407 (7 TB internal media storage)
- VENICE S414 (14TB internal media storage)



## Features

- **On-air reliability:** The entire system has no single point of failure due to the redundancy of every system-relevant component.
- **SDI and IP functionality:** Equipped with a new video I/O board, VENICE S offers SDI and IP functionality.
- **Flexible system design:** VENICE S can be scaled to meet your requirements, no matter how many channels and how much storage capacity or bandwidth you need.
- **UHD and HDR ready:** VENICE S supports up to one UHD p60 channel (bidirectional) and four HD p60 channels (bidirectional) and handles HDR material with ease.
- **Standard server platform:** VENICE S uses a standard IT server whose reliability and performance has proven itself a thousand times over in data centers worldwide.
- **Comprehensive software-based codec support:** VENICE S minimizes the need for transcoding by supporting a variety of software-based codecs that can be expanded via future software updates.
- **Service-oriented architecture:** FIMS and web services communications allow the greatest possible interoperability, flexibility and integrability in the broadcast value chain. VENICE S is easy to integrate into existing infrastructures and can be dynamically adapted to meet any requirement.
- **Storage options:** VENICE S can be equipped with up to 14 terabyte internal RAID storage and connected to external storage solutions.

### Channel Configuration

VENICE can be set to HD/SD or UHD-1 operation via the R&S<sup>®</sup> Device Manager.

#### HD/SD:

- four bidirectional HD/SD channels
- optional transform functionality per channel
- automatic aspect ratio conversion (ARC) with active format descriptor (AFD) support



### UHD:

- one bidirectional UHD-1 channel
- optional transform functionality
- one HD downconversion output channel (locked to UHD-1 channel)

### Workflow-based Metadata

VENICE S enables you to use the process of closed captioning (CC) and subtitling (STL), so that it can be decoded and displayed on a television, video screen, or other visual displays.

### VBI-ANC Handling

VENICE S supports the read out of VBI (vertical blanking interval) information. VBI information will be converted to ANC on any output raster.

INPUT			OUTPUT	
ANC & VBI Closed Caption		PLAYOUT	ANC Closed Caption	
SD-SDI V-Lines: 525	VBI CEA-608 data ANC CEA-608 data ANC & VBI CEA-608 data <sup>1</sup>		SD-SDI V-Lines: 625	ANC CEA-608 data (SMPTE 334-1)
			HD-SDI	ANC Closed captioning (CEA-708) (CDP) (SMPTE 334-1)
HD-SDI	ANC Closed captioning (CEA-708) (CDP) ANC CEA-608 data		SD-SDI V-Lines: 625	ANC CEA-608 data (SMPTE 334-1)
			HD-SDI	ANC Closed captioning (CEA-708) (CDP) (SMPTE 334-1)

1. particular case

INPUT			OUTPUT	
ANC & VBI Closed Caption		PLAYOUT	ANC Closed Caption	
SD-SDI V-Lines: 625	VBI OP-42 ANC OP-47 ANC & VBI OP-47/42 <sup>1</sup>		SD-SDI V-Lines: 625	ANC OP-47 (SMPTE 2031)
			HD-SDI	ANC OP-47 (SMPTE 2031)



INPUT			OUTPUT	
HD-SDI	ANC OP-47		SD-SDI V-Lines: 625	ANC OP-47 (SMPTE 2031)
			HD-SDI	ANC OP-47 (SMPTE 2031)

1. particular case

The following VBI information will be converted to ANC:

VBI		ANC (SMPTE 291)
WSS (Wide Screen Signaling, ETSI EN 300 294)		AFD (Active Format Description, SMPTE 2016)
VBI OP-42 (Teletext/Subtitles)		ANC OP-47 (SMPTE 2031)
Line 21 (VBI CEA-608 data) (CC)		ANC CEA -608/708 (SMPTE 334-1)

ANC packages can be saved in QuickTime (CC only) and MXF OP1a files according to SMPTE 436.

### Closed Caption

VENICE S allows pass through of embedded closed captions, insertion from closed caption files and SD/HD up and down conversion. Thereby SD closed captions conforms to the CEA-608. HD closed captions uses CEA-608 captions encapsulated within CEA-708 packets.

VENICE S supports embedded closed caption information stored in QuickTime (MOV). It records embedded CEA-708 information from the incoming SDI signal in digital SD and HD.

When writing QuickTime files (ingest or transform) the closed caption data are preserved in the following order whereas the first type found is written into the files:

- 1 CEA-708 ANC (digital)
- 2 CEA-608 ANC (digital)

By default it is a QuickTime CEA-708 track ('c708').

A closed caption track will only be added to QuickTime files if valid closed caption data is detected on the first frame of the provided input or if writing of such a track has been enforced in the R&S<sup>®</sup>VENICE software (available with software version 3.5), in the R&S<sup>®</sup>Device Manager (available with software version 4) or via VENICE web service command **configureCodecRequest**.

Furthermore, closed captions are stored in MXF OP-1a files as defined in the SMPTE 436M standard. The closed captions are preserved with a head and tail trim. Then they can be played out to SDI again.

Multiple languages can be inserted into four data channels on line 21 from separate closed caption files. The first and the second closed caption track will be placed into field 1 of the video frame. If more tracks will be necessary closed caption information also can be written in a separate \*.scc file. For this additional scc 3 files have to be enabled in the video settings of the R&S<sup>®</sup>Device Manager. Field 2 of a video frame then transfer closed caption tracks three and four.

For playout purposes external \*.scc files can be inserted to the SDI signal.



If transcoding one file format into another file format during ingest as well as transcoding the closed caption information could be lost with the following format: MXF (OP Atom, Sony XDCam IMX, AS02, AS11, IMF).

Closed Captions couldn't be lost with the following formats: MOV, MXF (OP1a Generic, RDD09, Sony XD-Cam DV, XAVC) and MPEG-2.

## Subtitles

VENICE S allows pass through of embedded subtitles, insertion from subtitle files and SD/HD up and down conversion.

VENICE S supports embedded subtitling information in MXF OP1a files or additional in separate \*.stl files. Subtitles can be read and written according to EBU Tech 3264-E.

For playout purposes external \*.stl files for multiple languages can be inserted to the SDI signal.



With the VDCP command **SubtitleMode** you can determine, that the system automatically uses subtitle files, if present. To specify the directory where the system looks for subtitle files you have to use the **SubtitleFilePath** command.

Currently VENICE S supports Latin and Greek character sets.

**Aspect Ratio** There are many technical issues while dealing with SD and HD content. SD content can be available in 16:9 or 4:3. HD content is always 16:9. A broadcaster must be able to playout all three types of material and switch seamlessly between them all. The aspect ratio can be changed at various points in the broadcast chain.

To get an optimal picture it is important that the format bring accurate information with it. Outside the US, WSS (Wide Screen Signaling) was sometimes used with SD signals to define the aspect ratio. The information was stored on VBI line 20 for NTSC and line 23 for PAL. Meanwhile AFD has replaced WSS for both, SD and HD material.

AFD (Active Format Description) describes the video picture in terms of the aspect ratio and other characteristics of the active image within the coded frame.

With one of the following values in the **AFD DATA MODE** in the R&S<sup>®</sup>Device Manager or via the VENICE web service it can be determined, if the existing AFD data file should be used or if this data should be overwritten:



If transcoding one file format into another file format during ingest as well as transcoding the AFD information could be lost with the following format: MXF (OP Atom, Sony XDCam IMX, AS02, AS11, IMF).

AFD data couldn't be lost with following formats: MXF (OP1a Generic, RDD09, Sony XDCam DV, XAVC) and MPEG-2.

<b>Strip</b>	All AFD data is removed.
<b>PassThrough</b>	The existing AFD data is passed through.



<b>Generate</b>	The existing AFD data is passed through. If no AFD data is present, AFD data is generated based on the current settings.
<b>Replace</b>	The AFD data is always generated based on the current settings. Existing AFD data is replaced.

The „AFD Reset Mode“ can be used to determine whether the AFD overwrite should be valid only for this clip or until further notice.

**Supported Conversion Using AFD** VENICE S can be configured for SD, HD and UHD playback. So the server supports many different clip-related aspect ratio conversions (ARC) as shown in the following:

AFD In	Input (4:3)	AFD Out	Output (16:9)
0001	Reserved	-	Invalid
0010	Letterbox 16:9 image, at the top of the coded frame	1000	Full frame 16:9 image, the same as the coded frame
0011	Letterbox 14:9 image, at the top of the coded frame	1011	Pillarbox 14:9 image, horizontally centered in the coded frame
0100	Letterbox image with an aspect ratio greater than 16:9, vertically centered in the coded frame	0100	Letterbox image with an aspect ratio greater than 16:9, vertically centered in the coded frame
0101	Reserved	-	Invalid
0110	Reserved	-	Invalid
0111	Reserved	-	Invalid
1000	Full frame 4:3 image, the same as the coded frame	1001	Pillarbox 4:3 image, horizontally centered in the coded frame
1001	Full frame 4:3 image, the same as the coded frame	1001	Pillarbox 4:3 image, horizontally centered in the coded frame
1010	Letterbox 16:9 image, vertically centered in the coded frame with all image areas protected	1010	Full frame 16:9 image, with all image areas protected
1011	Letterbox 14:9 image, vertically centered in the coded frame	1011	Pillarbox 14:9 image, horizontally centered in the coded frame



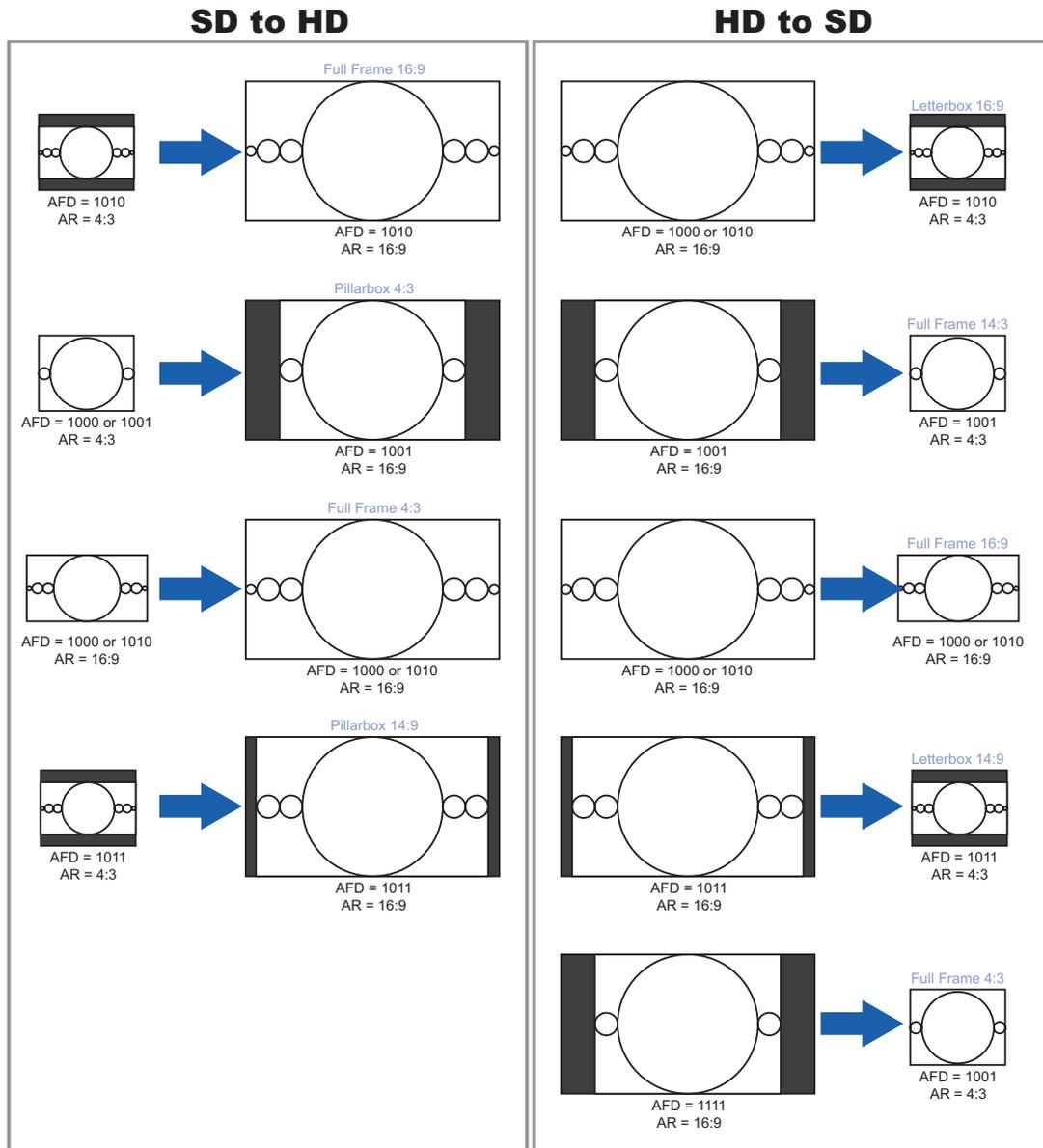
AFD In	Input (4:3)	AFD Out	Output (16:9)
1100	Reserved	-	Invalid
1101	Full frame 4:3 image, with alternative 14:9 center	1101	Pillarbox 4:3 image
1110	Letterbox 16:9 image, with alternative 14:9 center	1110	Full frame 16:9 image
1111	Letterbox 16:9 image, with alternative 4:3 center	1111	Full frame 16:9 image

AFD In	Input (4:3)	AFD Out	Output (16:9)
0001	Reserved	-	Invalid
0010	Full frame 16:9 image, the same as the coded frame	1010	Letterbox 16:9 image, vertically centered in the coded frame with all image areas protected
0011	Pillarbox 14:9 image, horizontally centered in the coded frame	1011	Letterbox 14:9 image, vertically centered in the coded frame
0100	Letterbox image with an aspect ratio greater than 16:9, vertically centered in the coded frame	0100	Letterbox image with an aspect ratio greater than 16:9, vertically centered in the coded frame
0101	Reserved	-	Invalid
0110	Reserved	-	Invalid
0111	Reserved	-	Invalid
1000	Full frame 16:9 image, the same as the coded frame	1010	Letterbox 16:9 image, vertically centered in the coded frame with all image areas protected
1001	Pillarbox 4:3 image, horizontally centered in the coded frame	1000	Full frame 4:3 image, the same as the coded frame
1010	Full frame 16:9 image, with all image areas protected	1010	Letterbox 16:9 image, vertically centered in the coded frame with all image areas protected
1011	Pillarbox 14:9 image, horizontally centered in the coded frame	1011	Letterbox 14:9 image, vertically centered in the coded frame
1100	Reserved	-	Invalid



<b>AFD In</b>	<b>Input (4:3)</b>	<b>AFD Out</b>	<b>Output (16:9)</b>
1101	Pillarbox 4:3 image, with alternative 14:9 center	1101	Full frame 4:3 image, with alternative 14:9 center
1110	Full frame 16:9 image, with alternative 14:9 center	1110	Letterbox 16:9 image, with alternative 14:9 center
1111	Full frame 16:9 image, with alternative 4:3 center	1111	Letterbox 16:9 image, with alternative 4:3 center

In the following figure represent the most common conversions.



Incorrect set AFD's are ignored.

At any time AFD values might be overwritten with the VENICE web service command **ActiveFormatBase**. This setting is also possible in the R&S<sup>®</sup> Device Manager. Furthermore you can scale and resize the video material if output format and the format of the video material are different. Therefore the following parameter are available:

<b>Off</b>	The material will maintain its original size.
<b>Box</b>	The aspect ratio will not be preserved. The resulting images will be stretched or compressed if the aspect ratio is different and you will always receive a full image in the output.
<b>Crop</b>	The images will be scaled to their maximum allowable width or height so that you receive a full image at the output. If the aspect ratio is different, parts of the images will be cropped.
<b>Fit</b>	The original material will be scaled to its maximum allowable width or height so that no information gets lost. If the aspect ratio is different, you will receive black bars in the output.
<b>Active Format Based</b>	The scaling will be performed based on the "Supported Conversion Using AFD" on page 21.

## Audio Routing

The R&S<sup>®</sup>Device Manager allows an easy audio routing of every video channel.

## DolbyE

VENICE S supports the pass through of DolbyE audio. Thereby DolbyE tracks will be handled as PCM audio. For example: if an MXF file has 8 channels of PCM audio, it is possible that the first two channels (1 and 2) transfer DolbyE while the other channels (3 -6) transfer normal PCM audio. It is also possible the other way around, so that the first six channels transfer PCM audio and the last two channels DolbyE.

## Image Processing



VENICE supports upscaling during playout and transform operations.



		OUTPUT											
		480i29.97	576i25	720p50	720p59.94	1080p25	1080p/9.97	1080i25	1080p50	1080i29.97	1080p59.94	2160p50	2160p59.94
INPUT	480i29.97	x								x			
	576i25		x					x					
	720p50			x		x			x			x	
	720p59.94				x		x				x		x
	1080p25			x		x			x			x	
	1080p29.97				x		x			x	x		x
	1080i25		x					x					
	1080p50			x		x			x			x	
	1080i29.97	x								x			
	1080p59.94				x		x				x		x
	2160p50			x		x			x			x	
	2160p59.94				x		x				x		x

## Timecode

VENICE S supports a wide range of timecode types:

- Internal
- Generic (Timecode of media file)
- LTC (Longitudinal Timecode)
- VITC (Vertical Interval Timecode)
- VTRTC (RS-422 Timecode)
- DVITC (Digital Vertical Interval Timecode)
- DLTC (Digital Longitudinal Timecode)
- Time of day

On video tapes the VITC is basically stored for each frame in one video line of the vertical blanking interval. While the LTC is recorded along the tape, mostly for this, an audio track is used. In opposite to VITC, the LTC can be read out during a fast forward and written later. Certainly during a still image (paused) or during a slow forward the LTC can not be read out. With VITC it's possible.

DLTC and DVITC is inserted in the vertical blanking interval of the SDI-Signal. It won't be published in the video image. DVITC replaces the previously used VITC of analog systems. DVITC will be recorded most preferably in line 9 and 10 of the SDI signal at the output of MAZ devices.

VTRTC (RS-422) is a via RS-422 transferred timecode of a controlled video source.

Time of day is the actual time of the device.

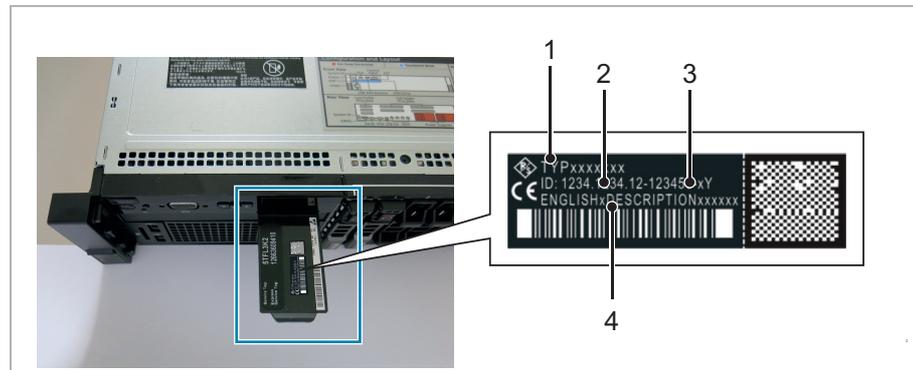
## Play After Write

The automated play after write functionality allows a true visual quality check. It reads the open file being currently recorded directly from the disk. The operator can see the file and can judge its quality directly after the video has passed the encoding process and has been written to the storage.



Please note that for the play after write feature an additional channel for playout is needed. Furthermore, the ingest and playout channels need to be on the same VENICE server.

## Type Plate



Type plate

- |   |                     |
|---|---------------------|
| 1 | Type                |
| 2 | Article number      |
| 3 | Serial number       |
| 4 | Product description |

## Scope of Delivery

The following components are included:

- VENICE S chassis
- Front plate
- Rack mount kit
- Cable management kit
- Power cable (rack)
- 2x SR SFP+ 10GbE optical transceiver
- SDI 3G SFP bundle (4x): SDI 3G combined input and output SFPs for 4 bidirectional HD/SDI channels (includes 2x 3G dual receiver and 2x 3G dual transmitter)
- Product documentation

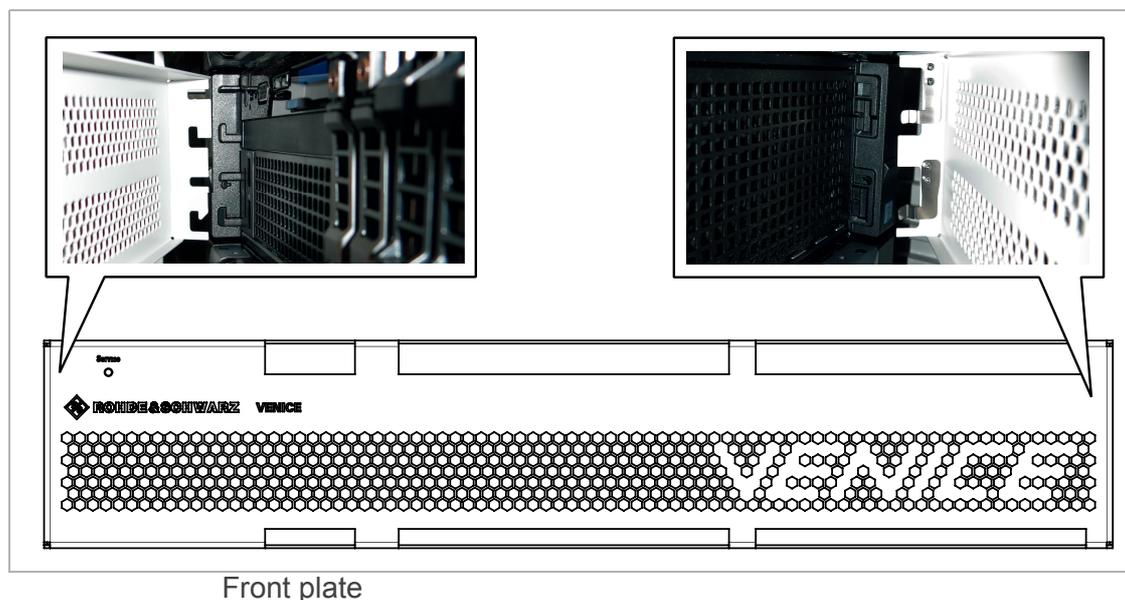
### **Optional:**

- VENICE accessory kit: 8x HD-BNC to BNC adapter cables, 4x RJ45 to DB9-adapter cables (RS422), 1x HD-D-SUB 26 male to 8 x XLR female/male breakout cables

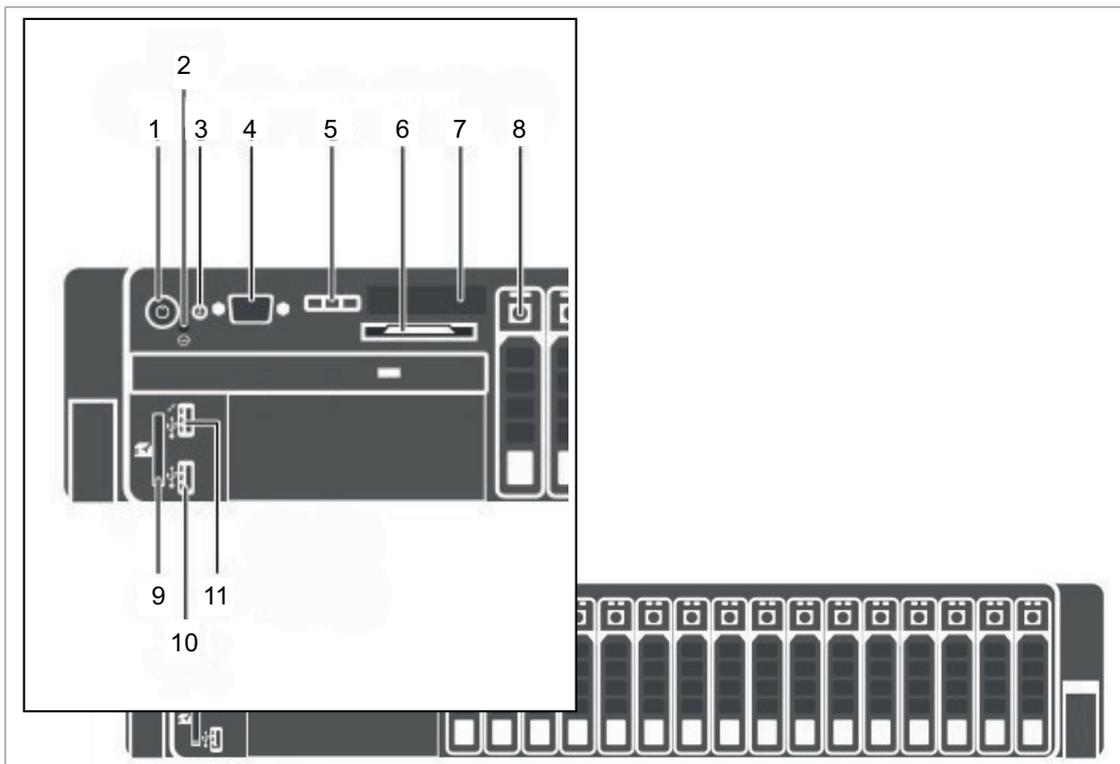
## The Front of the System

### Front Plate

The front plate covers all operation items and the disk array. It is attached on mounting on the left and on the right side in the front. For more information see chapter “Removing and Mounting the Front Plate” on page 92.



## Chassis Front



Chassis front

<b>1</b>	Power button		Enables you to know the power status of the system. The power indicator turns on when the system power is on. The power button controls the power supply output to the system.
<b>2</b>	NMI button		Enables you to troubleshoot software and device driver errors when running certain operating systems. This button can be pressed by using the end of a paper clip.
<b>3</b>	System identification button		Enables you to locate a particular system within a rack. The identification buttons are located on the front and back panels. Press the system identification button to turn the system ID on or off.
<b>4</b>	Video connector		Enables you to connect a VGA display to the system.
<b>5</b>	LCD menu buttons		Enables you to navigate the control panel LCD menu.

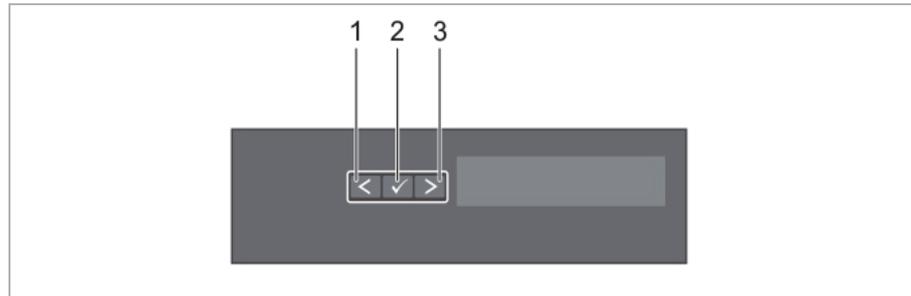


<b>6</b>	Information tag		Contains system information such as service tag, NIC, MAC address for your reference. The information tag is a slide-out label panel.
<b>7</b>	LCD panel		Displays system ID, status information, and system error messages. The LCD turns blue during normal system operation. When the system needs attention, the LCD turns amber and the LCD panel displays an error code followed by descriptive text.
<b>8</b>	Hard drives		Up to sixteen 2.5-inch hot-swappable hard drives.
<b>9</b>	vFlash media card slot		Enables you to insert a vFlash media card.
<b>10</b>	USB port		Enables you to connect USB devices to the system. The ports are USB 2.0 compliant.
<b>11</b>	USB management port/iDRAC Direct		Enables you to connect USB devices to the system or provides access to the iDRAC Direct features. The USB management port is USB 2.0 compliant.

## LCD Panel

The LCD panel of your system provides system information, status, and error messages to indicate if the system is functioning correctly or if the system needs attention.

- The LCD backlight turns blue during normal operating conditions.
- When the system needs attention, the LCD turns amber, and displays an error code followed by descriptive text.  
**NOTE: If the system is connected to a power source and an error is detected, the LCD turns amber regardless of whether the system is turned on or off.**
- The LCD backlight is turned off when the system is in standby mode and can be turned on by pressing either the **Select**, **Left**, or **Right** button on the LCD panel.
- The LCD backlight remains off if LCD messaging is turned off using the iDRAC utility, the LCD panel, or other tools.



LCD panel

<b>1</b>	Left	Moves the cursor back in one-step increments.
<b>2</b>	Select	Selects the menu item highlighted by the cursor.
<b>3</b>	Right	<p>Moves the cursor forward in one-step increments. During message scrolling:</p> <ul style="list-style-type: none"> <li>■ Press and hold the button to increase scrolling speed.</li> <li>■ Release the button to stop.</li> </ul> <p><b>NOTE: The display stops scrolling when the button is released. After 45 seconds of inactivity the display starts scrolling.</b></p>

## Home Screen

The home screen displays user-configurable information about the system. This screen is displayed during normal system operation when there are no status messages or errors. When the system is in standby mode, the LCD backlight turns off after a few minutes of inactivity, if there are no error messages.

Perform the following steps:

1. To view the home screen, press one of the three navigation buttons (**Select**, **Left**, or **Right**).
2. To navigate to the home screen from another menu, complete the following steps:
  - Press and hold the up arrow  until the **Home** icon  is displayed.
  - Select the **Home** icon.
  - On the home screen, press the **Select** button to enter the main menu.

## Setup Menu



When you select an option in the Setup menu, you must confirm the option before proceeding to the next action.



<b>iDRAC</b>	Select <b>DHCP</b> or <b>Static IP</b> to configure the network mode. If <b>Static IP</b> is selected, the available fields are <b>IP</b> , <b>Subnet (Sub)</b> , and <b>Gateway (Gtw)</b> . Select <b>Setup DNS</b> to enable DNS and to view domain addresses. Two separate DNS entries are available.
<b>Set error</b>	Select <b>SEL</b> to view LCD error messages in a format that matches the IPMI description in the SEL. This enables you to match an LCD message with an SEL entry. Select <b>Simple</b> to view LCD error messages in a simplified user-friendly description.
<b>Set home</b>	Select the default information to be displayed on the home screen. See chapter “View Menu” on page 34 or the options and option items that can be set as the default on the home screen.

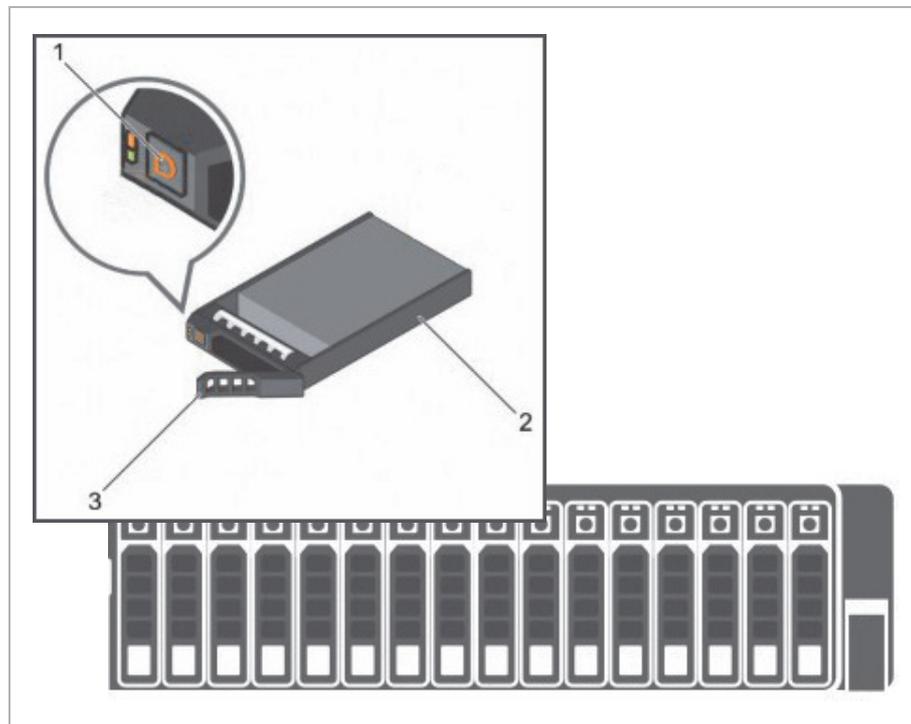
## View Menu



When you select an option in the **VIEW** menu, you must confirm the option before proceeding to the next action.

<b>iDRAC IP</b>	Displays the <b>IPv4</b> or <b>IPv6</b> addresses for iDRAC. Addresses include <b>DNS (Primary and Secondary)</b> , <b>Gateway</b> , <b>IP</b> , and <b>Subnet</b> (IPv6 does not have Subnet).
<b>MAC</b>	Displays the MAC addresses for <b>iDRAC</b> , <b>iSCSI</b> , or <b>Network</b> devices.
<b>Name</b>	Displays the name of the <b>Host</b> , <b>Model</b> , or <b>User String</b> for the system.
<b>Number</b>	Displays the <b>Asset tag</b> or the <b>Service tag</b> for the system.
<b>Power</b>	Displays the power output of the system in BTU/hr or Watts. The display format can be configured in the <b>Set home</b> submenu of the <b>Setup</b> menu.
<b>Temperature</b>	Displays the temperature of the system in Celsius or Fahrenheit. The display format can be configured in the <b>Set home</b> submenu of the <b>Setup</b> menu.

## Hard Drives



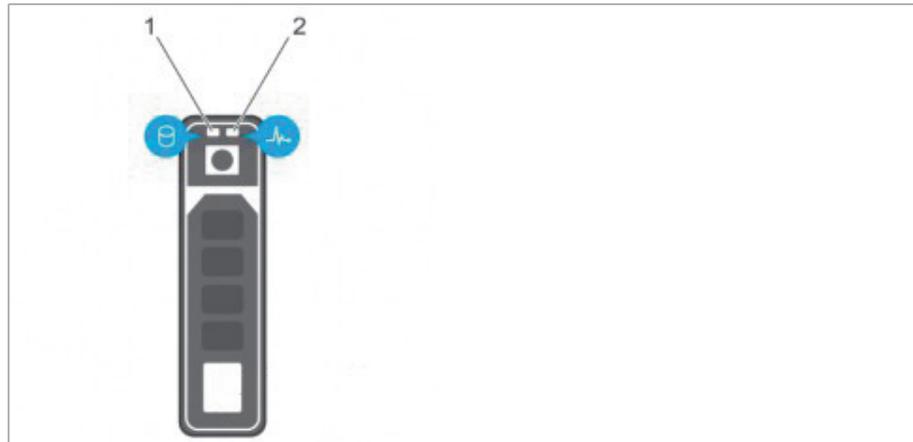
Hard drives

- |          |                           |
|----------|---------------------------|
| <b>1</b> | Release button            |
| <b>2</b> | Hard drive carrier        |
| <b>3</b> | Hard drive carrier handle |

For more information about removing and installing a hard drive see chapter “Replacing a Hot Swappable Hard Drive” on page 100.



## Hard Drive Indicators



Hard drive indicators

- 1 Hard drive activity indicator
- 2 Hard drive status indicator



If the hard drive is in the Advanced Host Controller Interface (AHCI) mode, the status indicator (on the right side) does not function and remains off.

## Hard Drive Indicator Codes

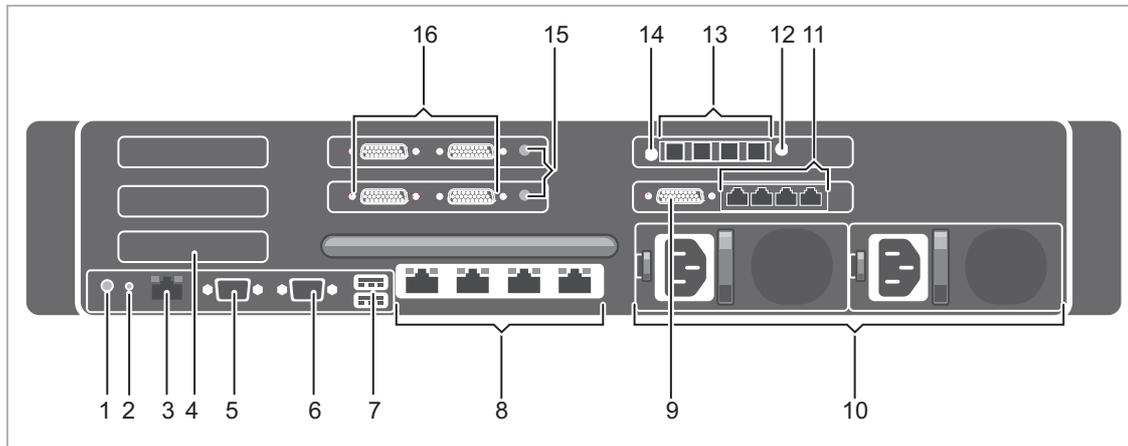
Flashes green twice per second	Identifying drive or preparing for removal.
Off	Drive ready for insertion or removal. <b>NOTE: The drive status indicator remains off until all hard drives are initialized after the system is turned on. Drives are not ready for insertion or removal during this time.</b>
Flashes green, amber, and turns off	Predicted drive failure
Flashes amber four times per second	Drive failed
Flashes green slowly	Drive rebuilding



<b>Steady green</b>	Drive online
<b>Flashes green for three seconds, amber for three seconds, and turns off after six seconds</b>	Rebuild stopped

## The Rear of the System

### Back Panel

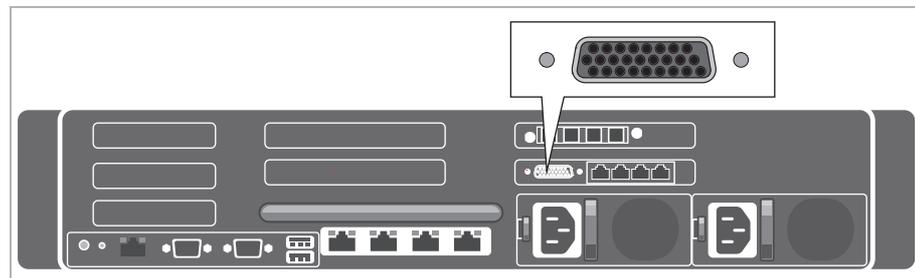


Back panel

<b>1</b>	System identification button		The identification buttons on the front and back panels can be used to locate a particular system within a rack. When one of these buttons is pressed, the LCD panel on the front and the system status indicator on the back flashes until one of the buttons is pressed again. Press to toggle the system identification (ID) on or off.
<b>2</b>	System identification connector		Connects the optional system status indicator assembly through the optional cable management kit.
<b>3</b>	iDRAC Enterprise port		Dedicated management port.
<b>4</b>	Half-height PCIe expansion card slot (3)		Enables you to connect up to three half-height PCI Express expansion cards.
<b>5</b>	Serial connector		Enables you to connect a serial device to the system. For the pin assignment see chapter “Serial Connector” on page 55.
<b>6</b>	Video connector		Enables you to connect a VGA display to the system. For the pin assignment see chapter “Video Connector” on page 56.

7	USB port (2)		Enables you to connect USB devices to the system. The ports are USB 3.0-compliant.
8	Ethernet connector (4)		Four integrated connectors that include: <ul style="list-style-type: none"> <li>■ Two 10 Mbps/100 Mbps/1 Gbps NIC connectors</li> <li>■ Two 100 Mbps/1 Gbps/10 Gbps SFP+/10 GbE T connectors</li> </ul> For more information see "Network Interface Card (NIC) Connectors" on page 47.
9	HD Sub D connector		LTC In/Out For more information see chapter "LTC In/Out" on page 40 and for the pin assignment chapter "HD Sub D Connector" on page 53.
10	Power supply unit (PSUs) (2)		AC 750 W For more information see chapter "Power Supply Unit" on page 41.
11	RJ45 connector, serial RS-422 interface (4)		Out- or input of master/slave control signals For more information see "Out- or Input of Master/Slave Control Signals" on page 43 and for the pin assignment chapter "RJ45 Connector" on page 54.
12	HD-BNC connector		Downconvert video output For more information see chapter "Downconvert Video Output" on page 43.
13	SFP+ port (4)		In-/Output of digital video signals For more information see chapter "In-/Output of Digital Video Signals" on page 45.
14	HD-BNC connector		Reference input
15	Analog audio port <b>(Optional)</b>		3.5 mm unbalanced analog stereo headphone jack to monitor the audio of VENICE S.
16	HD Sub D connector <b>(Optional)</b>		DB-26 connector (female) for a balanced audio signal in- and output of the digital audio channels (AES/EBU); XLR connectors are available via a breakout cable For more information see chapter "AES/EBU Audio" on page 40. and for the pin assignment chapter "HD Sub D Connector" on page 53.

## LTC In/Out

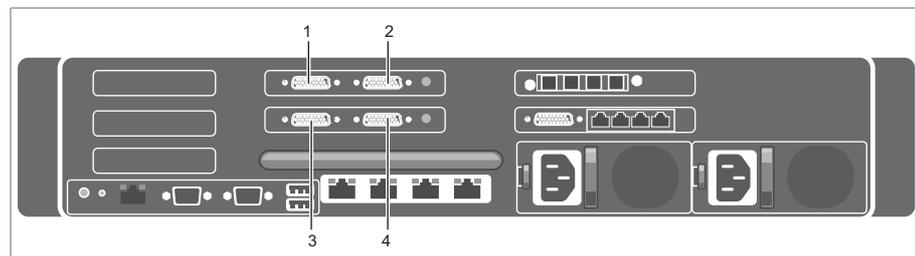


HD Sub D connector

Besides the timecode options which are described in chapter “Timecode” on page 26 VENICE S gives you the possibility to use LTC timecode on each channel for ingest and playout. Receive or provide LTC timecode with the supplied Lynx cable (see chapter “Lynx CBL-AES1604 Cable” on page 58).

Via the R&S® Device Manager it's possible to assign LTC timecode that is received by one channel to all other channels.

## AES/EBU Audio

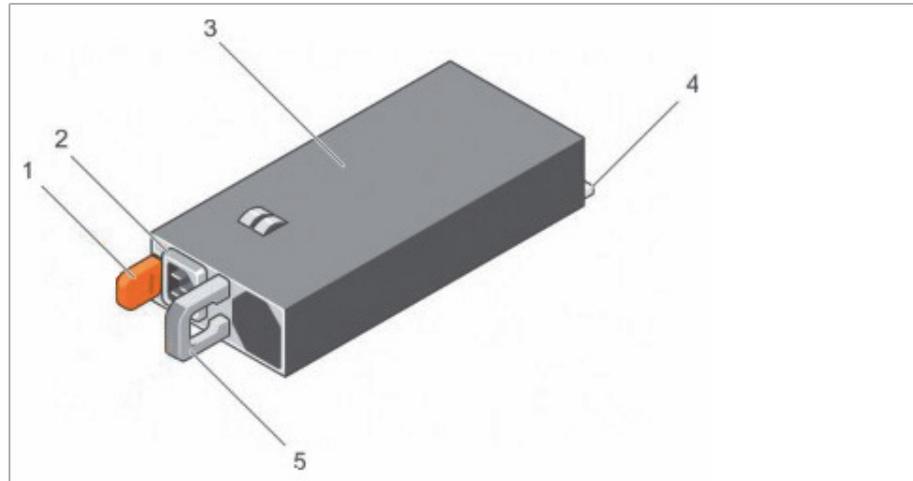


HD Sub D connectors (optional)

- |          |           |
|----------|-----------|
| <b>1</b> | Channel 1 |
| <b>2</b> | Channel 2 |
| <b>3</b> | Channel 3 |
| <b>4</b> | Channel 4 |

## Power Supply Unit

Your system supports two 750 W multi range PSUs (90 - 240 VAC).



Power supply unit

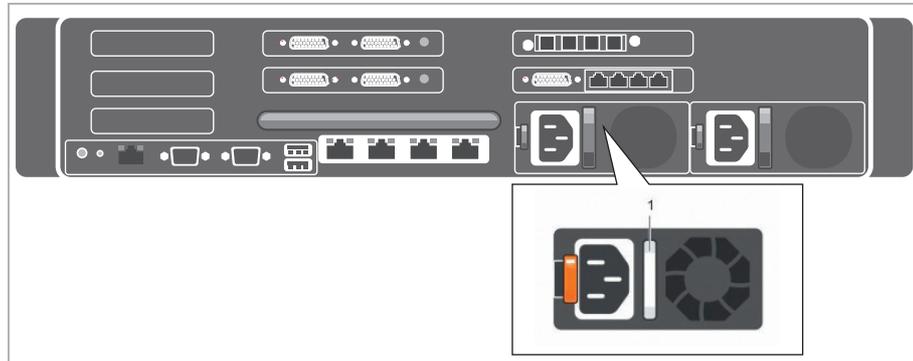
- |          |                               |
|----------|-------------------------------|
| <b>1</b> | Release latch                 |
| <b>2</b> | Power supply status indicator |
| <b>3</b> | PSU                           |
| <b>4</b> | Power connector               |
| <b>5</b> | PSU handle                    |

For more information about removing and installing a PSU see chapter “Replacing a Power Supply Unit” on page 97.



## Power Supply Indicator

AC power supply units (PSUs) have an illuminated translucent handle that serves as an indicator. The indicator shows whether power is present or a power fault has occurred.



PSU status indicator

### 1 PSU status indicator/handle

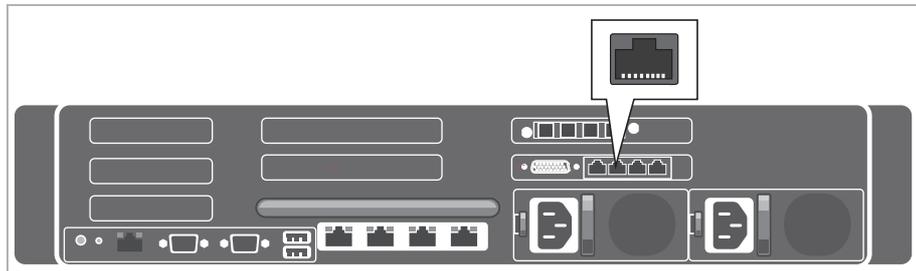
### PSU Status Indicator Codes



PSU status indicator codes

	Status	Condition
<b>A</b>	Green	A valid power source is connected to the PSU and the PSU is operational.
<b>B</b>	Flashing green	When the firmware of the PSU is being updated, the PSU handle flashes green.
<b>C</b>	Flashing green and turns off	When hot-adding a PSU, the PSU handle flashes green five times at 4 Hz rate and turns off. This indicates a PSU mismatch concerning efficiency, feature set, health status, and supported voltage.
<b>D</b>	Flashing amber	Indicates a problem with the PSU.

## Out- or Input of Master/Slave Control Signals

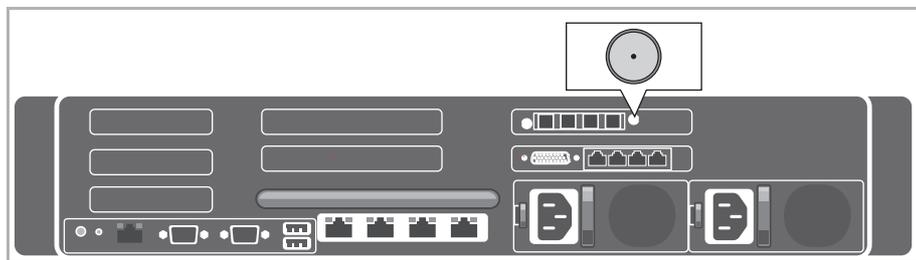


RJ45 connector

During a standard operation the pin-outs of the RJ45 connector are adjusted to slave. To use the full functionality of this connector you have to use the supplied adapter cable. For more information about the cable see chapter “Adapter Cable” on page 56. For the pin assignment see chapter “RJ45 Connector” on page 54.

With software version 4 in normal operation VENICE S is slave. With software version 3.5 it is possible to change between master and slave in the R&S® VENICE Client software.

## Downconvert Video Output



HD-BNC connector

The downconvert video output can be used for HD monitoring while the system is configured for UHD operation. The downconvert functionality is only active with UHD or 4K rasters. If enabled the UHD material will be send via the SDI outputs (1 channel operation) and the HD material via the downconvert output. In principle the signal is suitable for broadcast operations (e.g. Simulcast Playout). Please note the following restrictions.

 Ingest signals (e.g. ingest of external satellite feeds), which are asynchronously to the output can cause frame repetitions or drop frames.



Compared to the UHD output the downconvert output is delayed by a number of frames.

## Standard Conversion



The frame rate of the downconvert output must be either the same as the frame rate of the UHD raster or a multiple of it.

Output for 2160p50 Input:

- 576i50<sup>1</sup>
- 720p50
- 1080p25<sup>2</sup>
- 1080psf25<sup>2</sup>
- 1080i50
- 1080p50

Output for 2160p59,94 Input:

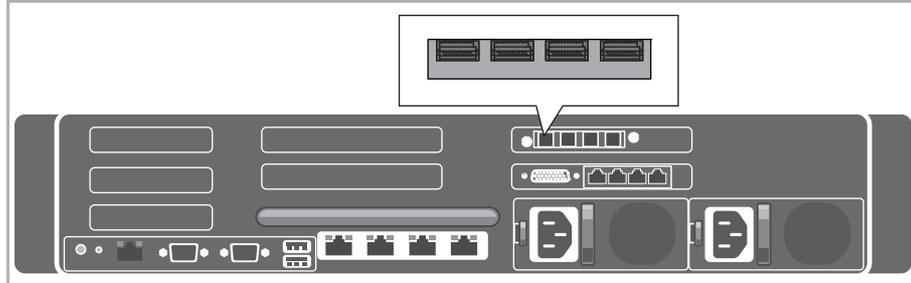
- 480i59,94<sup>1</sup>
- 720p59,94
- 1080p29,97<sup>2</sup>
- 1080psf29,97<sup>2</sup>
- 1080i59,94
- 1080p59,94

<sup>1</sup> Each full p frame will be converted to a single field in alternating order. All original motion phases will be kept during this conversion. Due to the enormous scaling factor from SD to UHD this conversion might incorporate aliasing.

<sup>2</sup> This conversion skips every second original frame resulting in a reduction of temporal resolution.

## In-/Output of Digital Video Signals

The SFP+ ports are used for an in-/output of single-link or quad-link SDI 1.5G or 3G video signals.



To use the functionality you have to insert the dual receiver and the dual transmitter into the SFP+ ports. For more information see chapter “Installing the System” on page 62.

**i** Use only original Rohde & Schwarz certified parts.



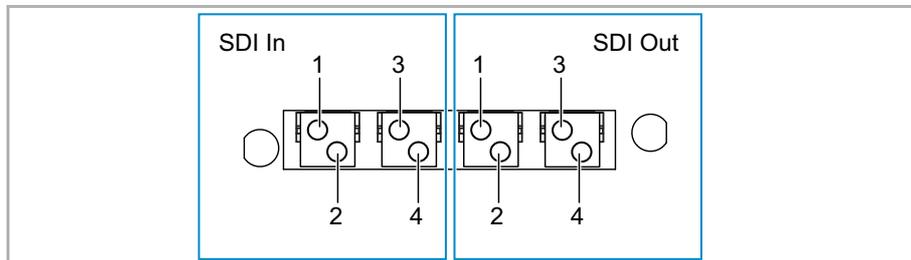
3GB SDI SFP coaxial dual transmitter



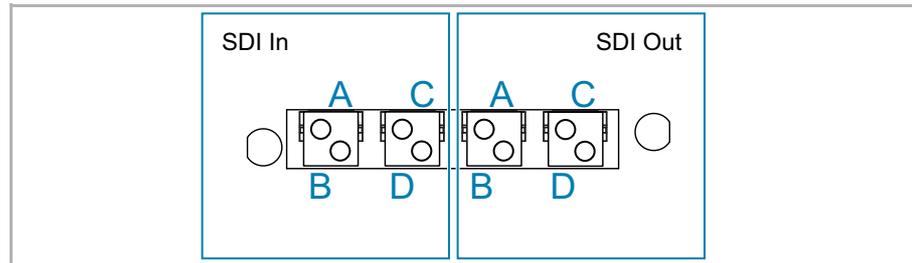
3G SDI SFP coaxial dual receiver

### Default Channel Assignment

The following modes are available:



Single link mode (HD)



Quad link mode (UHD)

To change the channel assignment use the R&S® Device Manager.

### Video I/O Formats

#### SDI 270 Mb/s Single Link

Standard	Raster	Framerate	Cabling per channel
SMPTE 259M	525i	29.97 fps	1x SDI 1.5G
SMPTE 259M	625i	25 fps	

#### SDI 1.5G Single Link

Standard	Raster	Framerate	Cabling per channel
SMPTE 274M	1080i, 1080p, 1080PsF	25 fps, 29.97 fps	1x SDI 1.5G
SMPTE 296M	720p	25fps, 29.97fps, 50fps, 59.94fps	

### SDI 3G Single Link (Level a or B)

Standard	Raster	Framerate	Cabling per channel
SMPTE 425	1080p	50fps, 59.94fps	1x SDI 3G

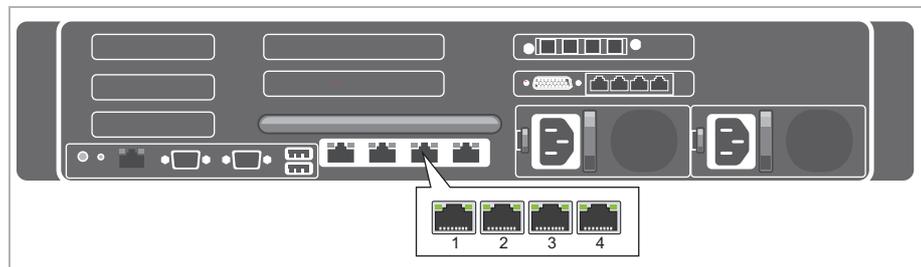
### SDI 6G Quad Link

Standard	Raster	Framerate	Cabling per channel
SMPTE 2036	2160p	25fps, 29.97fps	4x SDI 1.5G

### SDI 12G Quad Link (Level A or B)

Standard	Raster	Framerate	Cabling per channel
SMPTE 2036	2160p	50fps, 59.94fps	4x SDI 3G

### Network Interface Card (NIC) Connectors

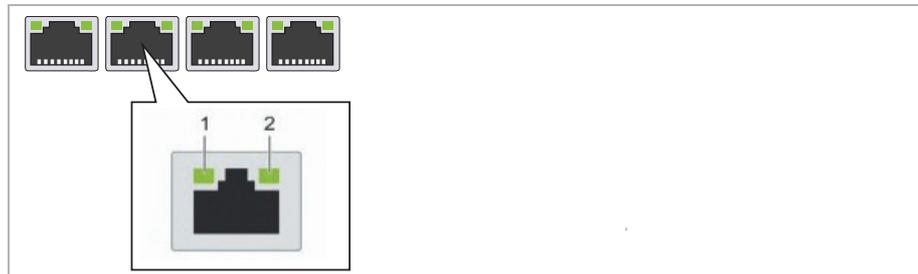


Ethernet connectors

	Port	Configuration	Speed
<b>1</b>	eno1	unconfigured	10 Gbps SFP+
<b>2</b>	eno2	unconfigured	10 Gbps SFP+
<b>3</b>	eno3	DHCP	1 Gbps RJ45
<b>4</b>	eno4	static IP address: 10.0.0.8	1 Gbps RJ45



## NIC Indicator



NIC indicator

- 1** Link indicator
- 2** Activity indicator

## NIC Indicator Codes



NIC indicator codes

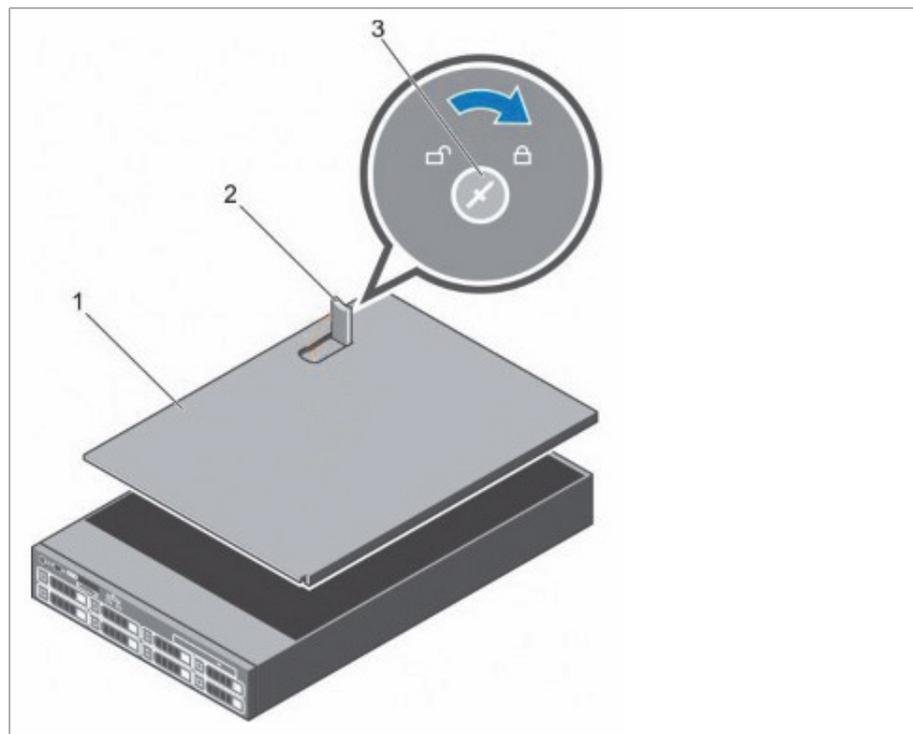
	Status	Condition
<b>A</b>	Link and activity indicators are off	The NIC is not connected to the network.
<b>B</b>	Link indicator is green	The NIC is connected to a valid network at its maximum port speed (1 Gbps or 10 Gbps).
<b>C</b>	Link indicator is amber	The NIC is connected to a valid network at less than its maximum port speed.
<b>D</b>	Activity indicator is flashing green	Network data is being sent or received.

## Inside the System

To get access to different components for example to replace a cooling fan you have to remove the system cover.

### System Cover

The system cover protects the components inside the system. Removing the system cover actuates the intrusion switch which aids in maintaining system security.

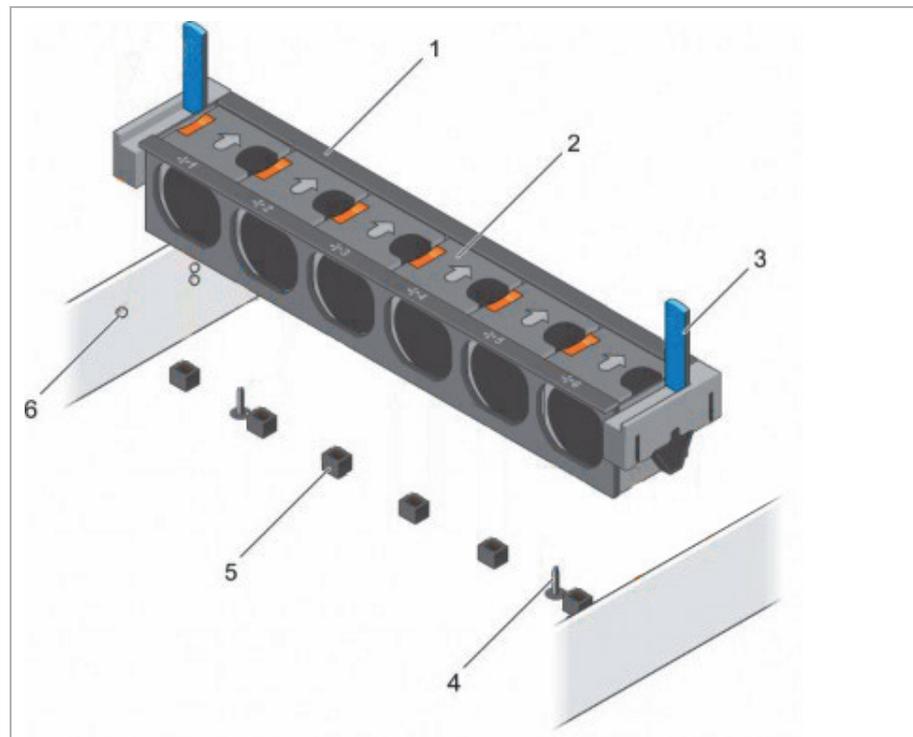


System cover

- |          |                    |
|----------|--------------------|
| <b>1</b> | System cover       |
| <b>2</b> | Latch              |
| <b>3</b> | Latch release lock |

For more information about opening and closing the system cover see chapter “Removing the System Cover” on page 94 and chapter “Installing the System Cover” on page 95.

## Cooling Fan Assembly



Cooling fan assembly

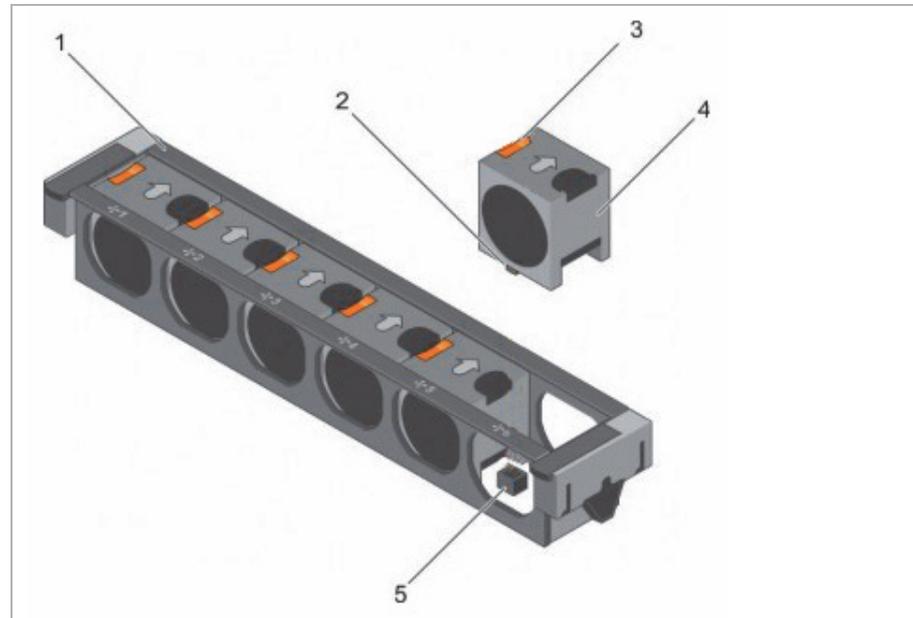
- |   |                                   |
|---|-----------------------------------|
| 1 | Cooling fan assembly              |
| 2 | Cooling fan (6)                   |
| 3 | Release lever (2)                 |
| 4 | Guide pin on the system board (2) |
| 5 | Cooling fan connector (6)         |
| 6 | Guide pin on the chassis (6)      |

The cooling fan assembly is an essential part of a server's cooling system. It ensures that the key components of the server such as the processors, hard drives, and memory get adequate air circulation to keep them cool. A failure in the server's cooling system can result in the server overheating and may lead to damage.

For more information about removing and installing the cooling fan assembly see chapter "Replacing a Cooling Fan Assembly" on page 103.

## Cooling Fans

Your system supports six hot-swappable cooling fans.



Cooling fans

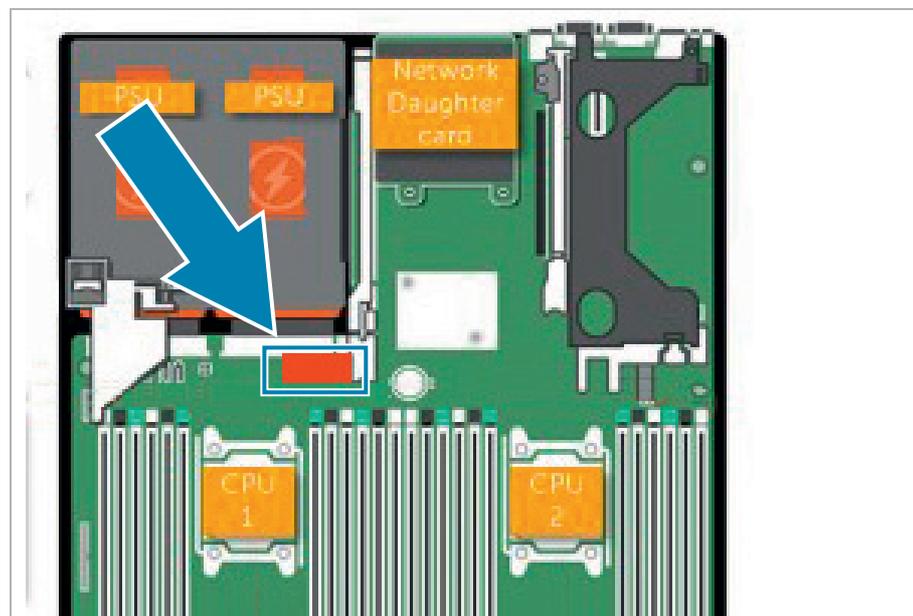
- 1** Cooling fan assembly
- 2** Cooling fan connector (6)
- 3** Fan release tab (6)
- 4** Cooling fan (6)
- 5** Cooling fan connector on the system board (6)



In the event of a problem with a particular fan, the fan number is referenced by the R&S® Device Manager, allowing you to easily identify and replace the proper fan by noting the fan numbers on the cooling fan assembly.

For more information about removing and installing a cooling fan see chapter “Replacing a Cooling Fan” on page 104.

## Rescue Stick



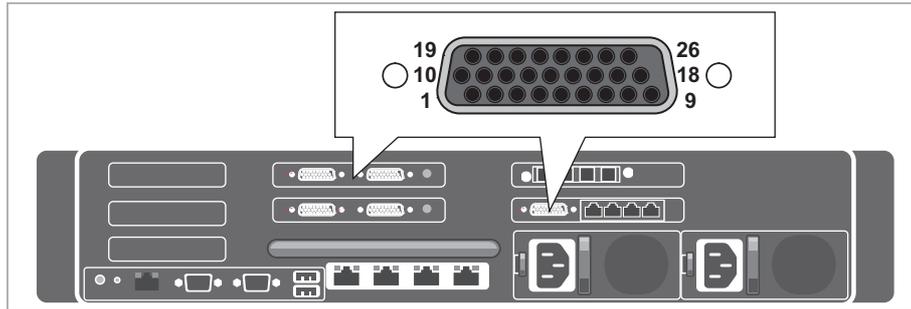
Rescue stick

The VENICE contains an internal USB flash drive that can be used to restore the operating system on the system disk back to its manufacturing state. Further information you will find in chapter “Replacing the Internal USB Memory Key” on page 107, chapter “Creating a Backup Image” on page 80 and chapter “Restoring the System” on page 83.

## Pin Assignment

### HD Sub D Connector

The HD Sub D Connector enables you to use LTC In/Out. For all necessary information see chapter “LTC In/Out” on page 40 and information about the cable available in chapter “Lynx CBL-AES1604 Cable” on page 58.



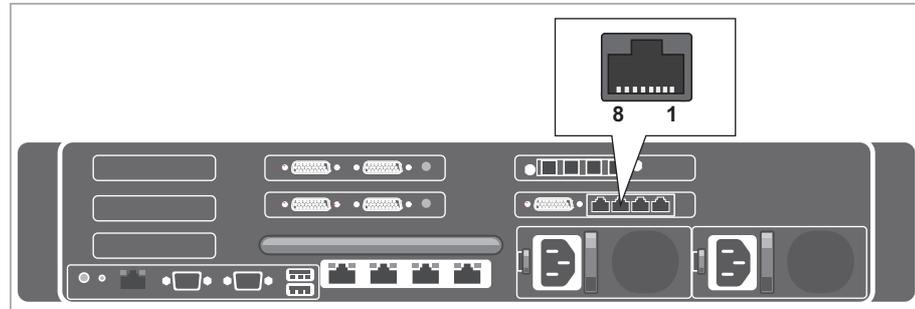
HD Sub D connector (external view on device [female])

Pin No.	Signal	Pin No.	Signal
1	GROUND	14	OUT1 N
2	OUT4 N	15	IN4 P
3	GROUND	16	IN3 N
4	OUT2 N	17	IN2 P
5	GROUND	18	IN1 N
6	IN4 N	19	GROUND
7	GROUND	20	OUT3 P
8	IN2 N	21	GROUND
9	GROUND	22	OUT1 P
10	WORDCLOCK OUT	23	GROUND
11	OUT4 P	24	IN3 P
12	OUT3 N	25	GROUND
13	OUT2 P	26	IN1 P



## RJ45 Connector

The RJ45 connector enables you to use Master/Slave control. For more information see chapter “Out- or Input of Master/Slave Control Signals” on page 43.



RJ45 connector, serial RS-422 interface (4) (external view on device [female])

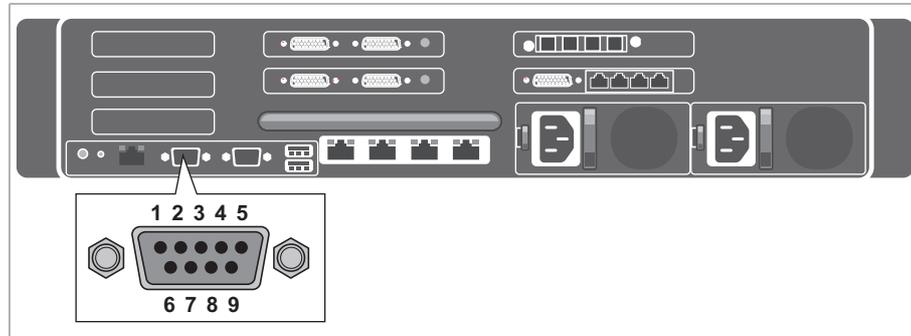
RJ45	Slave Mode (default)	Master Mode
Pin No.	Signal	Signal
1	GND	GND
2	reserved	reserved
3	RX (+)	TX (+)
4	TX (-)	RX (-)
5	TX (+)	RX (+)
6	RX (-)	TX (-)
7	not connected	not connected
8	not connected	not connected



If you want to manufacture a direct line VDCP cable please note the slave mode assignment above. Your VDCP cable should connect the automation’s TX+/- pins with the RX+/- pins of the VENICE S and vice versa (+ to + and - to - and of course GND/ground).

## Serial Connector

The COM port enables you to connect a serial device to the system.

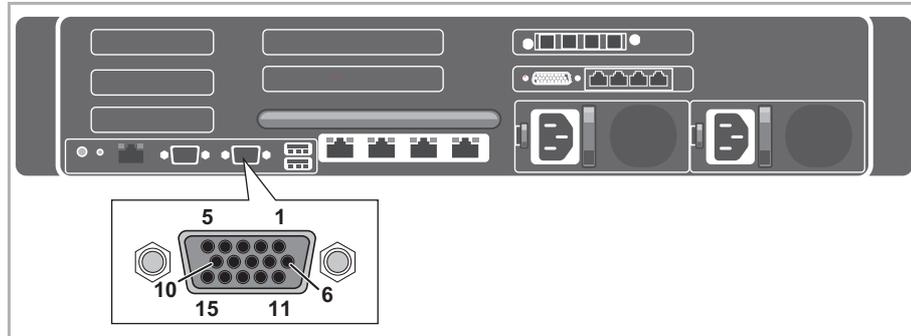


R232 connector (external view on device [female])

Pin No.	Signal	Pin No.	Signal
1	DCD	6	DSR
2	RXD	7	RTS
3	TXD	8	CTS
4	DTR	9	RI
5	Ground		

## Video Connector

The VGA port enables you to connect a VGA display to the system.



DB-15 connector (external view on device [female])

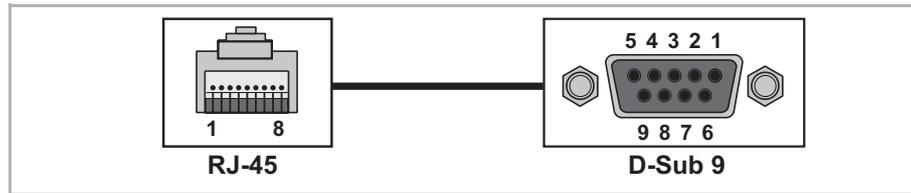
Pin No.	Signal	Pin No.	Signal
1	RED	9	KEY
2	GREEN	10	SGND
3	BLUE	11	ID0
4	ID2	12	ID1 or SDA
5	GND	13	HSYNC or CSYNC
6	RGND	14	VSYNC
7	GGND	15	ID3 or SCL
8	BGND		

## Adapter Cable

With the adapter cable its possible to transfer the master/slave control signal. For more information see chapter “RJ45 Connector” on page 54.



RS-422 (RJ-45 [RIB7.0] male to D-Sub 9



RS-422 (RJ45 [RIB7.0] male to D-Sub 9 female, external view)

RJ45	Slave Mode (default)	Master Mode	D-Sub 9
Pin No.	Signal	Signal	Pin No.
1	GND	GND	4, 6
2	reserved	reserved	5
3	RX (+)	TX (+)	3
4	TX (-)	RX (-)	2
5	TX (+)	RX (+)	7
6	RX (-)	TX (-)	8
7, 8	not connected	not connected	1, 9

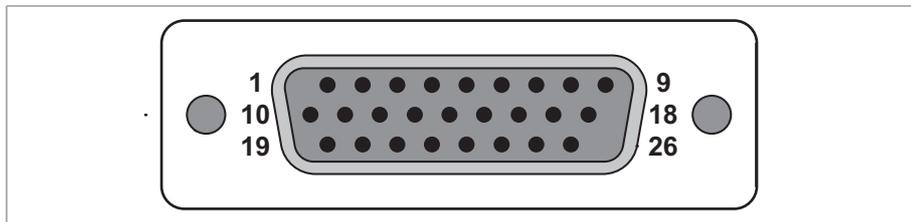


## Lynx CBL-AES1604 Cable

The Lynx CBL-AES1604 cable allows you to transfer an LTC in- and output signal for each channel. For more information see chapter “LTC In/Out” on page 40.



Lynx CBL-AES1604 cable



Lynx CBL-AES1604 cable (external view)

Pin No.	Signal	Pin No.	Signal
1	GROUND	14	OUT1 N
2	OUT4 N	15	IN4 P
3	GROUND	16	IN3 N
4	OUT2 N	17	IN2 P
5	GROUND	18	IN1 N
6	IN4 N	19	GROUND
7	GROUND	20	OUT3 P
8	IN2 N	21	GROUND
9	GROUND	22	OUT1 P



Pin No.	Signal	Pin No.	Signal
10	WORDCLOCK OUT	23	GROUND
11	OUT4 P	24	IN3 P
12	OUT3 N	25	GROUND
13	OUT2 P	26	IN1 P



## Network Ports

This chapter lists the default TCP and UDP ports used by VENICE S. All ports are open by default.

Port	Type	Info	Multicast	Maintenance	Automation	Software			
						VENICE View	VENICE Play	VENICE Control	Spycer
3702	UDP	WSDD service discovery	x			x	x	x	
3000	TCP	Device Manager		x					
8031	TCP	Installation service (RSI)		x					
8070	TCP	Maintenance service		x					
811*	TCP	VDCP over IP			x				
471*	TCP	Video overlay streaming				x		x	
30002-40001	TCP	SpycerNet					x	x	x
801*	TCP	VENICE web service (X=channel)				x	x	x	
30001	UDP	SpycerNet service discovery					x	x	
9983	TCP	SpycerCopy							x
8010	TCP	Spycer web service							x

\*channel number (starting with 1)



# Installation and Configuration

This chapter is divided into the following sections:

- "Installing the System" (page 62)
- "Starting the System" (page 66)
- "Configuring the System" (page 67)
- "Shutting Down the System" (page 69)

## Installing the System

Perform the following steps:

1. Unpack the VENICE S system and its accessories.

### NOTICE

#### Warranty Claims

To make warranty claims you have to keep the original packing and use it in case of a return transportation.

2. Check your delivery and compare it with the delivery note. In case of missing items, contact your local vendor or Rohde & Schwarz immediately.

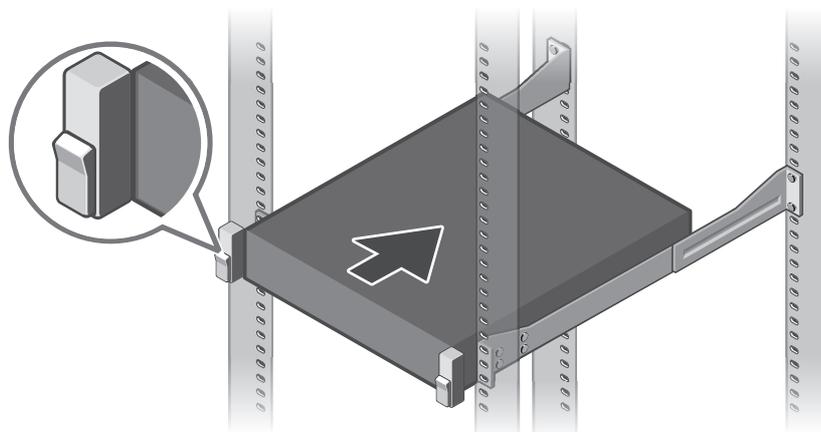
### ⚠ DANGER

#### Risk of Injury

Improper handling of the VENICE S can cause substantial damage to personnel and equipment by falling or overturning.

- VENICE S must be lifted and carried by two people on both sides.
- It is preferable to use lifting devices and means of transport.
- Beware of the crushing hazard when working with heavy loads.

3. Place the system on a firm, flat surface within reach of a power outlet or mount it in a rack. For proper air circulation and cooling make sure the ventilation holes on the rear of the system are not covered.



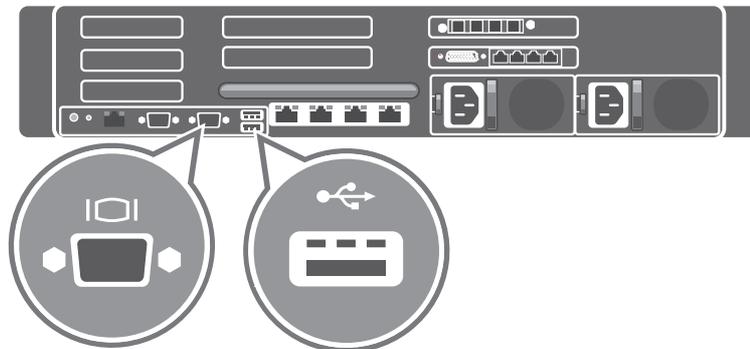
**NOTICE**

**Environmental Conditions**

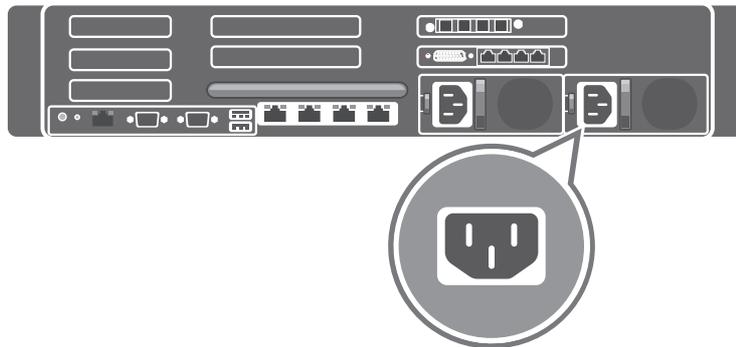
For error-free working and a long service life **VENICE S** needs some basic environmental conditions:

- Do not expose VENICE S to sources of heat, such as direct sunlight or a radiator.
- Do not cover or obstruct the ventilation holes of the system. When installing the system in a rack, take care that warmed up air is conducted to the rear of the rack and properly vented away.
- Avoid areas with high humidity or dust. Best operating conditions are given in an air-conditioned site.
- Do not expose VENICE S to strong electric or magnetic fields.
- Avoid areas where VENICE S will be subject to vibrations or shocks.

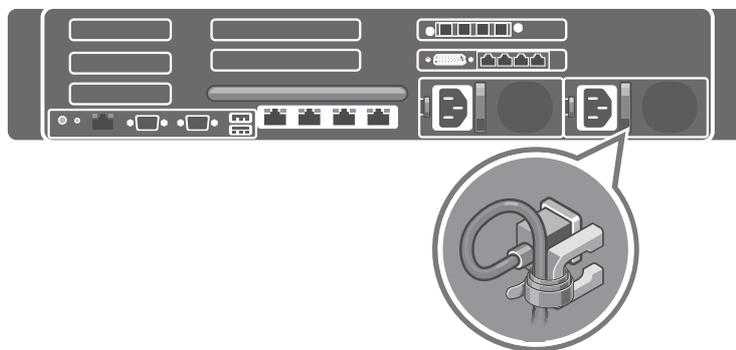
4. If necessary connect the following computer peripherals:
- Mouse
  - Keyboard
  - Monitor



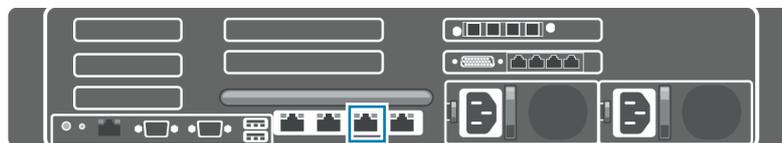
5. Connect the system to a power source.



6. Loop and secure the power cable using the retention strap.

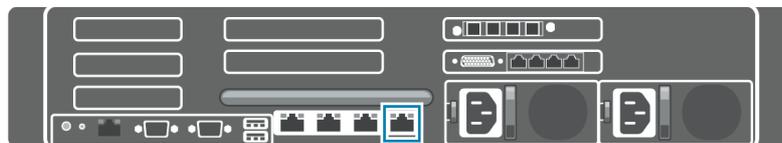


7. Connect a network cable to the Ethernet connector “eno3”.



- ▶ The IP address is assigned automatically.

8. Connect a network cable to the Ethernet connector “eno4”.



- ▶ The default IP is 10.0.0.8.



Use only original Rohde & Schwarz certified parts.

9. Insert the supplied 3GB SDI SFP coaxial dual transmitter and the 3G SDI SFP coaxial dual receiver as shown in the following in the according SPF+ port.



10. Connect the HD-BNC to BNC adapter cables to the SDI In/Out connectors.



11. Connect any other peripheral computer and video equipment. An overview of the panels and connectors are listed in chapter “The Rear of the System” on page 38.

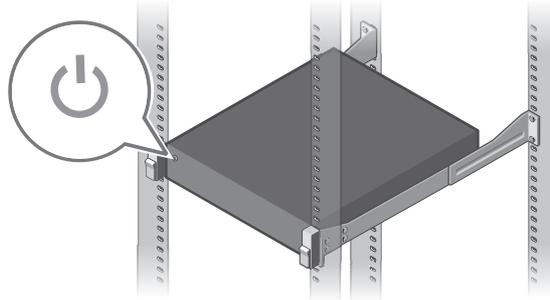
VENICE S is ready for first use. The VENICE S hardware is now properly installed and you can switch on the system.

## Starting the System

After a proper installation of the system you may start the VENICE S system at any time.

Perform the following steps:

- Press the power switch briefly to turn on the system.



- ▶ The system will be started. It takes several minutes until the system is fully operational.

For the initial setup the device must be integrated into a network. If the IP of the device is already known a remote SSH terminal (e.g. Putty) can be used to make the basic configuration. Alternatively a monitor and keyboard can be temporarily connected on the front or on the rear of the system. Continue with chapter “Configuring the System” on page 67.



## Configuring the System

For the initial setup the device must be integrated into a network.

### Log In

Perform the following steps:

- Log in as `root` with the following password: `password`.

### Network Configuration

There are two ways for the network configuration. You can use a dynamic or a static IP address as described bellow.

**Dynamic IP** Perform the following steps:

- Determine the dynamic IP with the command:  
`ifconfig eno3`

**Static IP** Perform the following steps:

1. Edit the configuration file with:  
`vi /etc/sysconfig/network-scripts/ifcfg-eno4`
2. Change line `IPADDR=10.0.0.8` into: `IPADDR= your new IP address`
3. Activate the new IP with:  
`systemctl restart network`



## Integrating Software Service

This setting configures which network interface the software uses for communication. In general this setting is already configured to use the interface eno3. Only use the following steps if a different configuration is necessary.

Perform the following steps:

- Use the command `fbms-setup -c [interface]` to integrate the software services on the network.  
e.g.: `fbms-setup -c eno4`

After the command is executed the configuration is complete. VENICE S can immediately be operated by remote control from any Windows system connected to the same network.

## System Update

Follow the steps in chapter “System Update” on page 86.



## Shutting Down the System

There are several possibilities to shut down the system. It depends on whether the operating system is already loaded, frozen or not completely loaded. Please act accordingly.

### NOTICE

#### Re-start

It takes a while to safely erase all memory banks of the system.

After a shut-down wait at least ten seconds before starting the system again.

## Shut Down While Running

Perform the following steps:

- Enter **poweroff** in the command line of the VENICE S.
  - ▶ The operating system will save your personal settings and once it has ended, the system will turn off.

System is shut down.

## Shut Down With Operating System Frozen or Not Completely Loaded

If the operating system is not responding anymore or not completely loaded, do as follows:

### NOTICE

#### Corrupted Data

Shutting down the system while frozen or not completely loaded may lead to corrupted system data.

Use this procedure only if absolutely necessary.

Perform the following steps:

- Shut down the system by pressing the power switch lengthly until the system turns off.

The system is shut down.





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# Operation

This chapter includes the following section:

- Operating the System



## Operating the System

Please note the differences between software version 3.5 and 4.

### Usable Software and Protocols

	Software Version 3.5		Software Version 4	
<b>Ingest</b>	R&S®VENICE Client		VDCP	RS-422, TCP/IP
	R&S®VENICE Control		R&S®VENICE Control	
	FIMS capture	SOAP	FIMS capture	SOAP
<b>Playout</b>	R&S®VENICE Client		VDCP	RS-422, TCP/IP
	R&S®VENICE Play		R&S®VENICE Play	
	MOS	SOAP	MOS	SOAP
<b>Transform</b>	R&S®VENICE Client			
	FIMS transform	SOAP	FIMS transform	SOAP

### VENICE Client Software



Usable only with software version 3.5.

The R&S<sup>®</sup>VENICE Client software is the operator's interface to the video channels. With it the operator can connect to the server (i.e. to the VENICE server software) via network and allocate one of the video channels to control ingest, playout and transform operations. The R&S<sup>®</sup>VENICE Client software can be installed on any Windows network client for a remote control of the server. With one instance of the software you can control different video channels of one or more VENICE servers at the same time.

## Playing Content

Use R&S<sup>®</sup>VENICE Play, the operator's interface to the video channels to playout content. With one instance of the software you can control different video channels of one or more VENICE servers at the same time.

In addition VENICE S supports MOS 3.8.4 using SOAP. By embracing and implementing MOS, Rohde & Schwarz has opened and simplified the integration of the VENICE S.

Furthermore VENICE S with software version 4 is VDCP compliant. This proprietary communications protocol primarily is used in broadcast automation to control broadcast devices, like video servers for broadcast television. The serial communications protocol based on RS-422 is derived from the Sony 9-Pin protocol, an industry-standard protocol for controlling professional broadcast VTRs.

VENICE S uses the tightly coupled master-slave methodology of VDCP. The controlling device takes the initiative in communications between the controlling broadcast automation device and the controlled device (video disk). VDCP conforms to the Open Systems Interconnection (OSI) reference model.

For more information see chapter "Control VENICE S" on page 75 and chapter "Out- or Input of Master/Slave Control Signals" on page 43.



## Ingesting Content

With R&S®VENICE Control you can connect to the server via network and control single and multi channel ingest operations. With one instance of the software you can control different video channels of one or more VENICE servers at the same time.

Furthermore VENICE S supports FIMS capture using SOAP. Rohde & Schwarz has chosen to implement the FIMS protocol as the primary method by which machines may access their devices and consume their services.

For more information see chapter “Control VENICE S” on page 75.

## Transforming Content

With software version 3.5 it is possible to control transform jobs with the R&S®VENICE Client software as well as via FIMS. With software version 4 you must use FIMS for this functionality. For more information see chapter “Control VENICE S” on page 75.

## File Management

The innovative data and content control software R&S®Spycer allows you to easily maintain transparency and control over video and audio data and their associated metadata. The software offers conclusive rights management, browsing, searching and viewing of video and audio material.

Rohde & Schwarz offers the Spycer functionality also via Spycer web service. For more information see chapter “Control VENICE S” on page 75.

## Multi-Viewing Content

The multi-viewer R&S®VENICE View gives you the opportunity to display as many video channels as possible in an overall view. All connected channels in the network are displayed in one workspace. R&S®VENICE View provides the operator the possibility to monitor video overlay, channel name and status, timecode information, as well as audio peakmeter of every connected VENICE video channel. R&S®VENICE View uses a sophisticated IP-based software architecture, without the need of extra SDI cabling and expensive multi-viewer equipment.

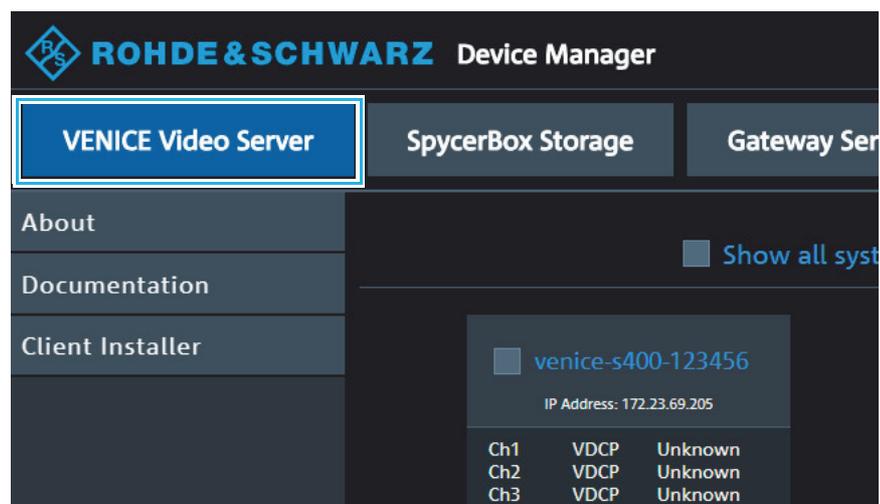
## Control VENICE S

To use one of the mentioned methods on a VENICE S with software version 4 activate the respective function in the R&S®Device Manager. For more information about the different web services, VDCP as well as how to integrate and control VENICE S by third-party software see the Software Integration Guide. (available at <https://gloris.rohde-schwarz.com>)

### Activating and Launching VDCP

Perform the following steps:

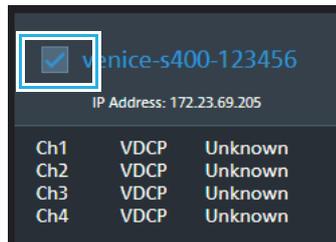
1. Open the R&S®Device Manager on your local system. To get access to the R&S®Device Manager you have to enter the previously determined IP address and the port 3000 in a standard browser.
2. Select the **VENICE MEDIA SERVER** tab.



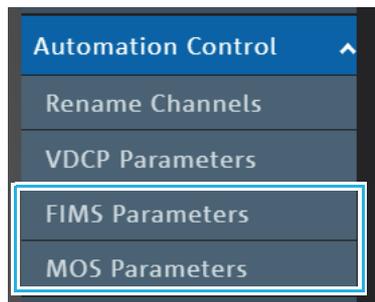
- ▶ The running mode will be indicated in the respective tile in the system view.



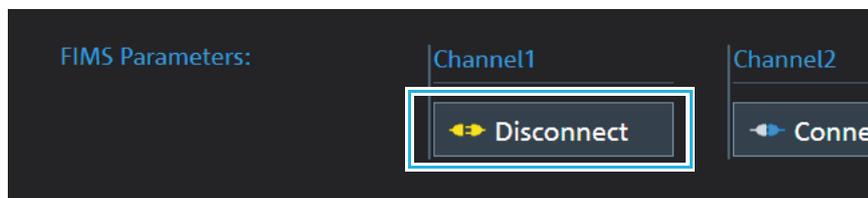
3. Select the respective system.



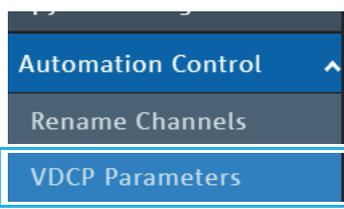
4. If the system runs in another mode than VDCP select the running mode (e.g. FIMS).



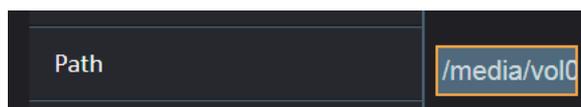
5. Click **Disconnect** to make the channel available for the VDCP mode.



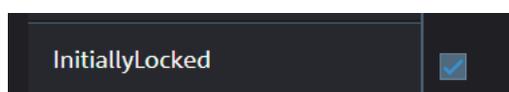
6. Select the **VDCP** mode in the **Automation Control** settings.



7. Enter a valid **Path** to a local or a central storage for each channel.



8. Activate **InitiallyLocked** for each channel.



- Click **Connect** to start the VDCP mode of the respective channel.

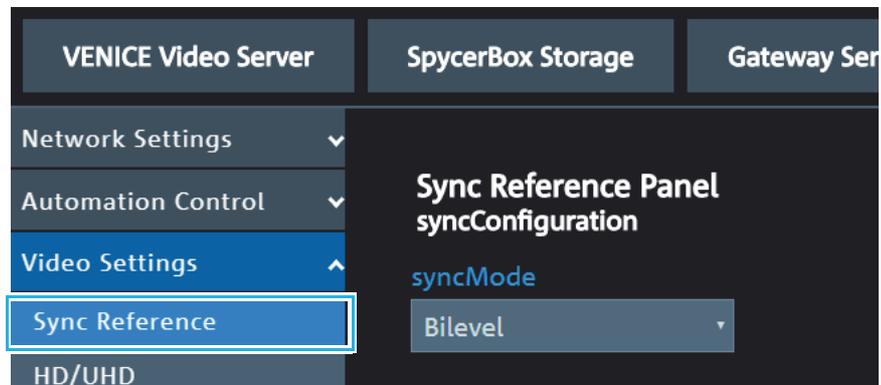


A successfully started connection of a channel in VDCP mode will be indicated in the system view.

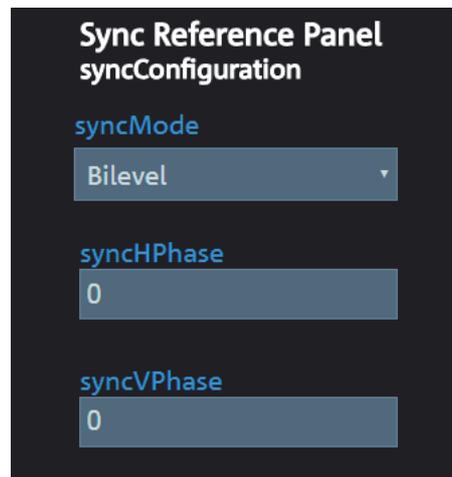
## Video Settings

Perform the following steps:

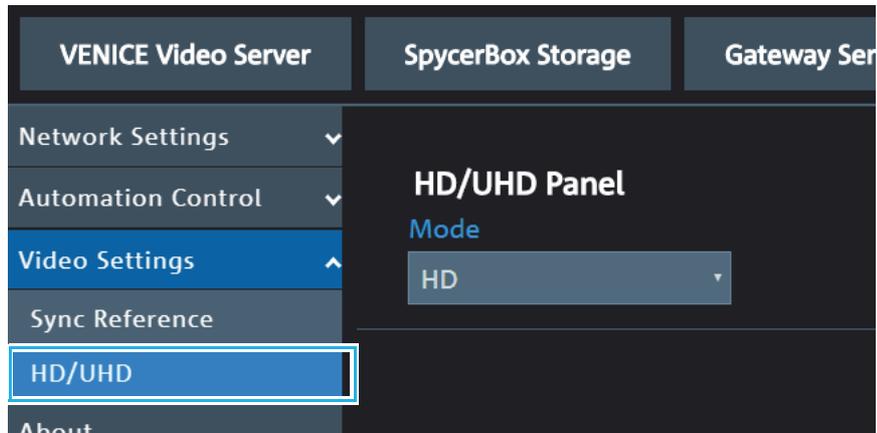
- Select the **Sync Reference** settings in the **Video Settings**.



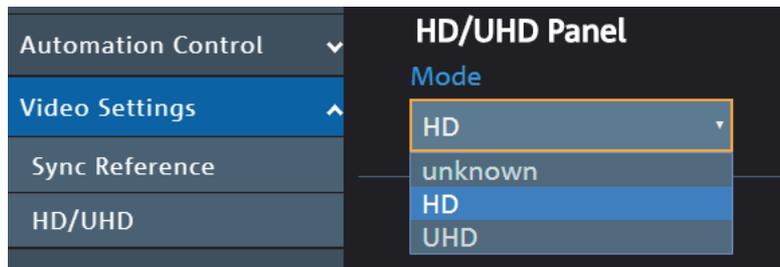
- Set the **Sync Mode**, the **syncHPhase** and the **syncVPhase** as needed. For detailed information see the documentation of the R&S<sup>®</sup> Device Manager.



3. Select the **HD/UHD** settings in the **Video Settings**.



4. Set the **Mode** as needed. For detailed information see the documentation of the R&S<sup>®</sup> Device Manager.





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# Administration

This chapter is divided into the following sections:

- "Creating a Backup Image" (page 80)
- "Restoring the System" (page 83)
- "System Update" (page 86)
- "System Monitoring" (page 87)

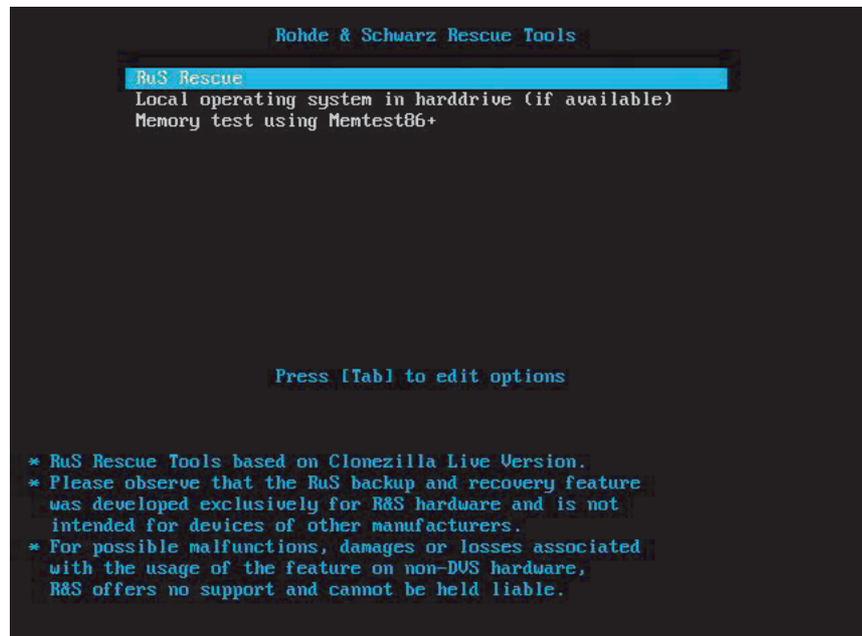


## Creating a Backup Image

The following describes the steps to make a backup image of the system disk and save it to the internal USB flash drive.

Perform the following steps:

1. If appropriate, disconnect all externally connected storage devices from the system.
2. Turn on the VENICE S. At the indicated moment during start-up you have to press **[F11]** to enter the boot menu.
  - ▶ The boot menu is displayed on the screen.
3. Select the internally installed USB flash drive as the boot device.



4. Press **[Enter]**.
  - ▶ The system will boot from the internal USB flash drive.
  - ▶ You will see a window on the screen where you can select the Rohde & Schwarz Rescue environment for loading.



To complete the loading of the Rohde & Schwarz Rescue environment some user entries are required. For this follow the instructions given on the screen.

The loading of the environment and the process itself will both try to initialize hardware that may not be present on your system. Any error messages displayed during loading/initialization, e.g. **Failed** or **Warning**, can be disregarded. The backup/recovery process should work nonetheless.

5. Select RuS Rescue and press **[Enter]**.



If you do not perform any action, RuS Rescue will be loaded automatically after 30 seconds.

- ▶ Once the loading has finished, you will see the RuS Rescue script with its options on the screen. Your display should look similar to the following:

```
--- RuS Rescue ---

1 - Backup on internal USB device
2 - Restore from internal USB device
3 - Backup on self selected external device
4 - Restore from self selected external device
5 - Reboot the system
6 - Poweroff the system

0 - Exit

Enter selection:
```

6. To create a backup image of your system disk and save it to the internal USB flash drive, press **[1]** and then **[Enter]**.

- ▶ A list of possible source devices will be detailed on the screen. The system disk normally is the 'ATA' disk with, for example, 'sda', 'sdb' or 'sdc' as its device name (e.g.: `1:0:0:0 disk ATA <device info> /dev/sda`).



Ex factory the VENICE S will be delivered with 'sda' as the default system disk. If other configurations have been made later or on customer request, this may be different.



**NOTICE**

**Data Loss**

Selecting the wrong source device may lead to an unwanted configuration and malfunctions when the system is operating.

**Continue with the following steps only if you are able to identify the correct source device.**

7. Enter the name of the system disk: Type in e.g. `sda` (or in other cases `sdb`, `sdc`, etc.) and press **[Enter]**.
  - ▶ The system will ask you to enter the image name for the backup image to be saved to the USB flash drive. By entering the name of an already existing backup image you can overwrite it.
8. Type in the name of the image you want to save to the USB flash drive for a later recovery. To confirm your entry press **[Enter]**.
  - ▶ The system will ask you to confirm your selection and whether you want to continue:



To abort the process at this point enter `n` for 'no' and press **[Enter]**. You will be redirected to the RuS Rescue script.

After starting the process its termination is no longer possible.

9. To start the backup process type in `y` for 'yes' and press **[Enter]**.
  - ▶ The program starts the backup process. Its progress will be indicated on the screen.



The backup process may take some time.

If during the process the screen turns black, press **[Space]** to get it back again.

When the system has finished the backup process, you will be notified about this. Then after pressing **[Enter]**, you will be redirected to the Rohde & Schwarz Rescue script once more where you can choose, for example, 'reboot' or 'poweroff' to restart or turn off the system.

## Restoring the System

The following describes the steps to make a recovery of the system disk.

**NOTICE****Total Loss of Data**

Selecting the wrong device for restoring the system partition will lead to a total loss of data.

**Do not execute any commands if you are not sure about the correct target device.**

Perform the following steps:

1. If appropriate, disconnect all externally connected storage devices from the system.
2. Turn on the VENICE S. At the indicated moment during start-up you have to press **[F11]** to enter the boot menu.
  - ▶ The boot menu is displayed on the screen.
3. Select the internally installed USB flash drive as the boot device.
4. Press **[Enter]**.
  - ▶ The system will boot from the internal USB flash drive. You will see a window on the screen where you can select the Rohde & Schwarz Rescue environment for loading.



To complete the loading of the Rohde & Schwarz Rescue environment some user entries are required. For this follow the instructions given on the screen.

The loading of the environment and the process itself will both try to initialize hardware that may not be present on your system. Any error messages displayed during loading/initialization, e.g. **Failed** or **Warning**, can be disregarded. The backup/recovery process should work nonetheless.

5. Select RuS Rescue and press **[Enter]**.



If you do not perform any action, RuS Rescue will be loaded automatically after 30 seconds.

- ▶ Once the loading has finished, you will see the Rohde & Schwarz Rescue script with its options on the screen. Your display should look similar to the following:

```
--- RuS Rescue ---

1 - Backup on internal USB device
2 - Restore from internal USB device
3 - Backup on self selected external device
4 - Restore from self selected external device
5 - Reboot the system
6 - Poweroff the system

0 - Exit

Enter selection:
```

6. To restore your system disk from the internal USB flash drive, press **[2]** and then **[Enter]**.
  - ▶ A list of possible target devices will be detailed on the screen. The system disk normally is the 'ATA' disk with, for example, 'sda', 'sdb' or 'sdc' as its device name:  
(e.g.: 1:0:0:0 disk ATA <device info> /dev/sda).



Ex factory the VENICE S will be delivered with 'sda' as the default system disk. If other configurations have been made later or on customer request, this may be different.

#### **NOTICE**

#### **Data Loss**

A recovery will overwrite all your data.

**Continue with the following steps only when you are able to identify the correct target device.**

7. Enter the name of the system disk: Type in e.g. **sda** (or in other cases **sdb**, **sdc**, etc.) and press **[Enter]**.
  - ▶ A further list of possible source images will be detailed on the screen. If there is only the Rohde & Schwarz recovery image on the USB flash drive, this one will be listed. If there are several images, all images will be displayed.
8. Select the image you want to use for the recovery. Normally, it provides the serial number of the VENICE S in its name. To confirm your choice press **[Enter]**.
  - ▶ The system will ask you to confirm your selection and whether you want to continue.



To abort the process at this point enter **n** for 'no' and press **[Enter]** on your keyboard. You will be redirected to the RuS Rescue script.

After starting the process its termination is no longer possible.

9. To start the recovery process type in **y** for 'yes' and press **[Enter]**.
  - ▶ The program starts the recovery process. Its progress will be indicated on the screen.



The recovery process may take some time.

If during the process the screen turns black, press **[Space]** to get it back again.

When the system has finished the recovery process, you will be notified. Then after pressing **[Enter]**, you will be redirected to the RuS Rescue script once more where you can choose, for example, 'reboot' or 'poweroff' to restart or turn off the system. The next time the system is started, it will load the restored operating system.

## System Update

Perform the following steps:

1. Download the last version of the installation package (zip-file) from: **<https://gloris.rohde-schwarz.com>**



The installation of RSI packages can only be done on a Windows platform. The respective machine have to be in the same network as the VENICE S.

2. Open the file manager (Windows Explorer).
3. Switch to the directory that contains the installation file.
4. Unzip the installation package.
5. Execute the installation file with a double-click of the mouse.
  - ▶ The installation routine starts and will guide you through the installation process.
6. Follow the instructions given on the screen.
  - ▶ During the installation procedure all necessary files and libraries will be installed on the computer system. The installation will be finished as soon as a message reports this.
7. Shut down the server with the command: **poweroff**
8. Restart the server by pressing the power switch.

After the cold start the system update will be complete and it can be started at any time.

## System Monitoring

The R&S<sup>®</sup> Device Manager allows you to monitor and query the state of the VENICE S and single parts of the hardware. You will be able to define critical values and configure an e-mail notification as well.

The following parts can be queried:

- Fans
- Disks arrays
- Power supply units
- CPU

### SNMP

The Simple Network Management Protocol (SNMP) is a standard internet protocol for the device management in IP networks. SNMP allows you to e.g. monitor and query the state of several VENICE devices in a network or single parts of the hardware.

VENICE S provides a **StorageManagement-MIB** and **MIB-De11-10892** that give you the opportunity to query the state of the system or parts of it, using SNMP.



**Explanation of the OIDs** When using a monitoring software, you will have to enter all OIDs once to be able to monitor the hardware's state continuously.

File	OIDs	Object	Value
MIB-Dell-10892	.1.3.6.1.4.1.674.108 92.1.700.12.1.6.1.1	System Board Fan 1	RPM (Rounds per minute)
	.1.3.6.1.4.1.674.108 92.1.700.12.1.6.1.2	System Board Fan 2	
	.1.3.6.1.4.1.674.108 92.1.700.12.1.6.1.3	System Board Fan 3	
	.1.3.6.1.4.1.674.108 92.1.700.12.1.6.1.4	System Board Fan 4	
	.1.3.6.1.4.1.674.108 92.1.700.12.1.6.1.5	System Board Fan 5	
	.1.3.6.1.4.1.674.108 92.1.700.12.1.6.1.6	System Board Fan 6	
	.1.3.6.1.4.1.674.108 92.1.700.20.1.6.1.1	System Board Inlet Temp	Temperature in °C * 10 [the value needs to be divided by 10, e.g. reading 220 -> 22°C]
	.1.3.6.1.4.1.674.108 92.1.700.20.1.6.1.2	System Board Exhaust Temp	
	.1.3.6.1.4.1.674.108 92.1.700.20.1.6.1.3	CPU1 Temp	
	.1.3.6.1.4.1.674.108 92.1.600.12.1.5.1.1	PS1 Status	other(1), unknown(2), ok(3), nonCritical(4), critical(5), nonRecoverable(6)
.1.3.6.1.4.1.674.108 92.1.600.12.1.5.1.2	PS2 Status		
Storage Management-MIB	.1.3.6.1.4.1.674.108 93.1.20.140.1.1.4.1	System disk array (array 1)	ready(1), failed(2), online(3), offline(4), degraded(6), verifying(7), resynching(15), regenerating(16), failedRedundancy(18), rebuilding(24), formatting(26), reconstructing(32), initializing(35), backgroundInit(36), permanentlyDegraded(52)
	.1.3.6.1.4.1.674.108 93.1.20.140.1.1.4.2	Meta data disk array (array 2)	
	.1.3.6.1.4.1.674.108 93.1.20.140.1.1.4.3	Log disk array (array 3)	
	.1.3.6.1.4.1.674.108 93.1.20.140.1.1.4.4	Data disk array (array 4) <b>VENICE S407/414 only</b>	



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# Maintenance

This chapter is divided into the following sections:

- "Safety Instructions" (page 90)
- "Removing and Mounting the Front Plate" (page 92)
- "Removing and Mounting the System Cover" (page 94)
- "Replacing a Power Supply Unit" (page 97)
- "Replacing a Hot Swappable Hard Drive" (page 100)
- "Replacing a Cooling Fan Assembly" (page 103)
- "Replacing a Cooling Fan" (page 104)
- "Replacing the Internal USB Memory Key" (page 107)



## Safety Instructions

### **WARNING**

#### **Risk of Injury**

Lifting heavy systems can lead to serious injury.

**Do not attempt to lift the system by yourself. Whenever you need to lift the system, get others to assist you.**

### **WARNING**

#### **Electric Shock**

Opening or removing the system cover while the system is powered on may expose you to a risk of electric shock.

**Don't open or remove the system while the system is powered on.**

### **NOTICE**

#### **System Damage**

Operating the system without the system cover can result in component damage.

**Do not operate the system without the cover for a duration exceeding five minutes.**

### **CAUTION**

#### **Warranty Claims**

Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Rohde & Schwarz is not covered by your warranty.

**Read and follow the safety instructions that are shipped with your product.**



**NOTICE**

**Electrostatic Discharge (ESD)**

Computer hardware contains components that are sensitive to electrostatic discharge. If you touch them without precautionary measures, they can be destroyed.

**Use a wrist strap connected to ground when accessing electronic parts and take care of grounding the system. Avoid touching the internal components of the computer system and the video board whenever possible.**

**NOTICE**

**Proper Operation and Cooling**

To ensure proper operation and cooling, all bays in the system and system fans must be populated always with either a component or a plate.

**Install a component or a plate if necessary.**

## Removing and Mounting the Front Plate

### Removing the Front Plate

Perform the following steps:

1. First remove the front plate on the right side from the front.



2. Remove the front plate from the mountings on the left side of the front.



## Mount the Front Plate

Perform the following steps:

1. Attach the front plate on the mountings on the left side of the front.



2. Attach the front plate also on the right side of the front.



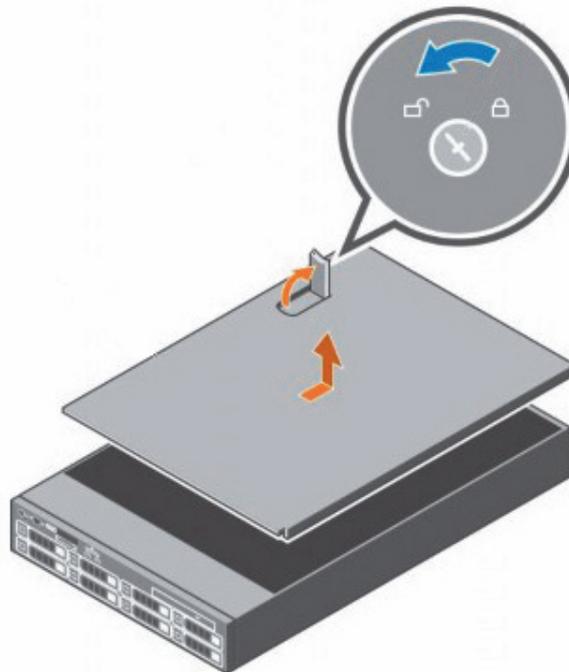
## Removing and Mounting the System Cover

### Removing the System Cover

- Requirements:
- ✓ Follow the safety guidelines listed in chapter “Safety Instructions” on page 90 and chapter “Safety” on page 9.
  - ✓ If installed, remove the front plate as described in chapter “Removing the Front Plate” on page 92.
  - ✓ If applicable, remove the system from the rack.

Perform the following steps:

1. Rotate the latch release lock counter clockwise to the unlocked position.
2. Lift the latch toward the back of the system.  
The system cover slides back and the tabs on the system cover disengage from the slots on the chassis.



The position of the latch may vary depending on the configuration of your system.

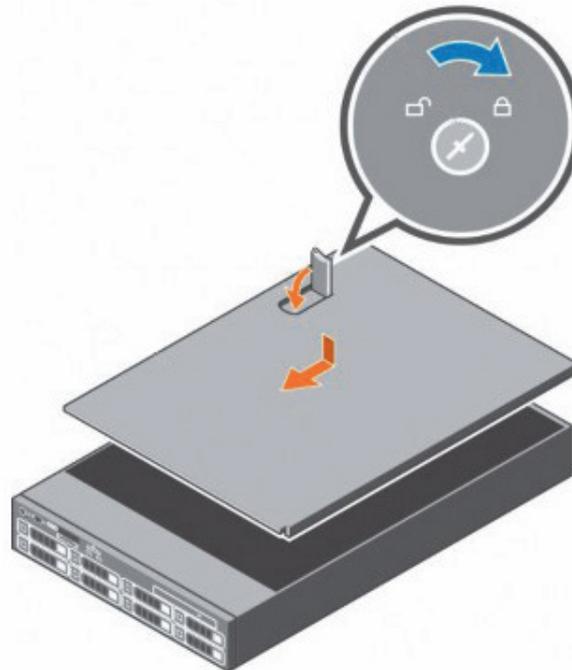
3. Hold the cover on both sides, and lift the cover away from the system.

## Installing the System Cover

- Requirements:
- ✓ Follow the safety guidelines listed in chapter “Safety Instructions” on page 90 and chapter “Safety” on page 9.
  - ✓ Ensure that all internal cables are connected and placed out of the way and no tools or extra parts are left inside the system.

Perform the following steps:

1. Align the slots on the system cover with the tabs on the chassis.
2. Push the system cover latch down to move the system cover into the closed position.
  - ▶ The system cover slides forward and the tabs on the system cover engage with the slots on the chassis. The system cover latch locks into place when the system cover engages with the slots on the chassis.
3. Rotate the latch release lock clockwise to the locked position.





4. If applicable, install the system into the rack.
5. If removed, install the front plate as described in chapter “Mount the Front Plate” on page 93.
6. Reconnect the peripherals and connect the system to the electrical outlet.
7. Turn on the system, including any attached peripherals.

## Replacing a Power Supply Unit

**⚠ CAUTION****PSU Mismatch Conditions**

Mixing PSUs from previous generations of systems can result in a PSU mismatch condition or failure to turn on.

**If two PSUs are used, they must be of the same maximum output power. For AC PSUs, use only PSUs with the Extended Power Performance (EPP) label on the back.**

**⚠ CAUTION****Data Loss**

The system needs one power supply for normal operation.

**On power-redundant systems, remove and replace only one power supply at a time in a system that is powered on.**



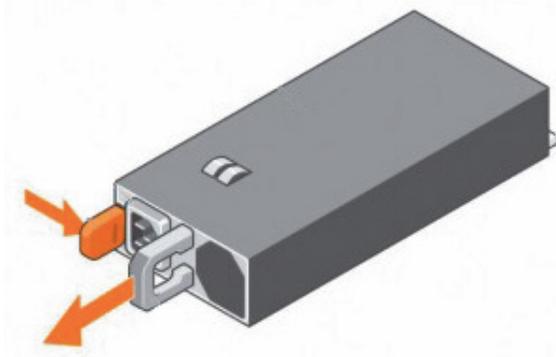
You may have to unlatch and lift the optional cable management arm if it interferes with power supply removal.

- Requirements:
- ✓ Follow the safety guidelines listed in chapter “Safety Instructions” on page 90 and chapter “Safety” on page 9.
  - ✓ If installed, remove the front plate as described in chapter “Removing the Front Plate” on page 92.
  - ✓ If applicable, remove the system from the rack.
  - ✓ Verify that both PSUs are of the same type and have the same maximum output power, that is listed on the PSU label (shown in watts).

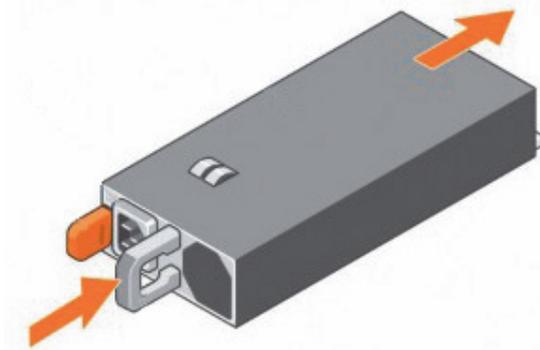


Perform the following steps:

1. Disconnect the power wires from the power source and the connector from the PSU you intend to remove.
2. Press the release latch and slide the PSU out of the chassis by using the PSU handle.



3. Slide the new PSU into the chassis until the PSU is fully seated and the release latch snaps into place.



4. If you have unlatched the cable management arm, relatch it.
5. Connect the power cable to the PSU and plug the cable into a power outlet.



When installing, hot-swapping, or hot-adding a new PSU, wait for 15 seconds for the system to recognize the PSU and determine its status. The PSU status indicator turns green to signify that the PSU is functioning properly.

6. Secure the cable with the strap.
7. If applicable, install the system into the rack.



8. If removed, install the front plate as described in chapter “Mount the Front Plate” on page 93.

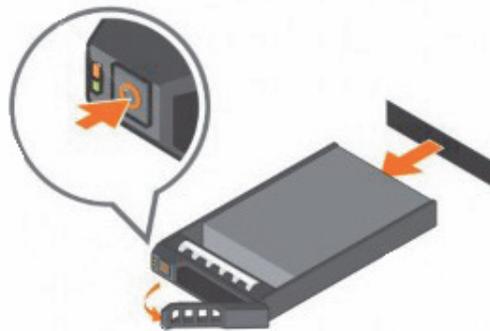


## Replacing a Hot Swappable Hard Drive

- Requirements:
- ✓ Follow the safety guidelines listed in chapter “Safety Instructions” on page 90 and chapter “Safety” on page 9.
  - ✓ If installed, remove the front plate as described in chapter “Removing the Front Plate” on page 92.

Perform the following steps:

1. Press the release button to open the hard drive carrier release handle.



2. Slide the hard drive out of the hard drive slot.  
→ If you are not replacing the hard drive immediately, insert a hard drive blank in the empty hard drive slot.

### NOTICE

#### Cooling Problems

To maintain proper system cooling, all empty hard drive slots must have hard drive blanks installed.

**Install a hard drive blank if necessary.**

### NOTICE

#### Data Loss

Using not tested hard drives can result in loss of data.

**Use only hard drives that have been tested and approved for use with the hard drive back-plane.**

**NOTICE**

**Damaged Carrier**

Inserting a hard drive carrier and attempting to lock its handle next to a partially installed carrier can damage the partially installed carrier's shield spring and make it unusable.

**When installing a hard drive, ensure that the adjacent drives are fully installed.**

**NOTICE**

**Data Loss**

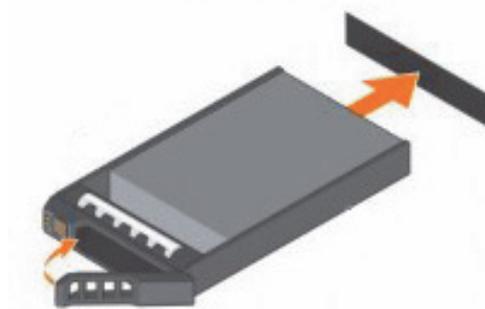
When a replacement hot swappable hard drive is installed and the system is powered on, the hard drive automatically begins to rebuild. Any data on the replacement hard drive is immediately lost after the hard drive is installed.

**Make absolutely sure that the replacement hard drive is blank or contains data that you wish to have over-written.**



Combining SAS and SATA hard drives in the same RAID volume is not supported.

3. Install a hard drive in the hard drive carrier.
4. Press the release button on the front of the hard drive carrier and open the hard drive carrier handle.
5. Insert the hard drive carrier into the hard drive slot until the carrier connects with the backplane.



6. Close the hard drive carrier handle to lock the hard drive in place.

7. Turn on the hard drive.



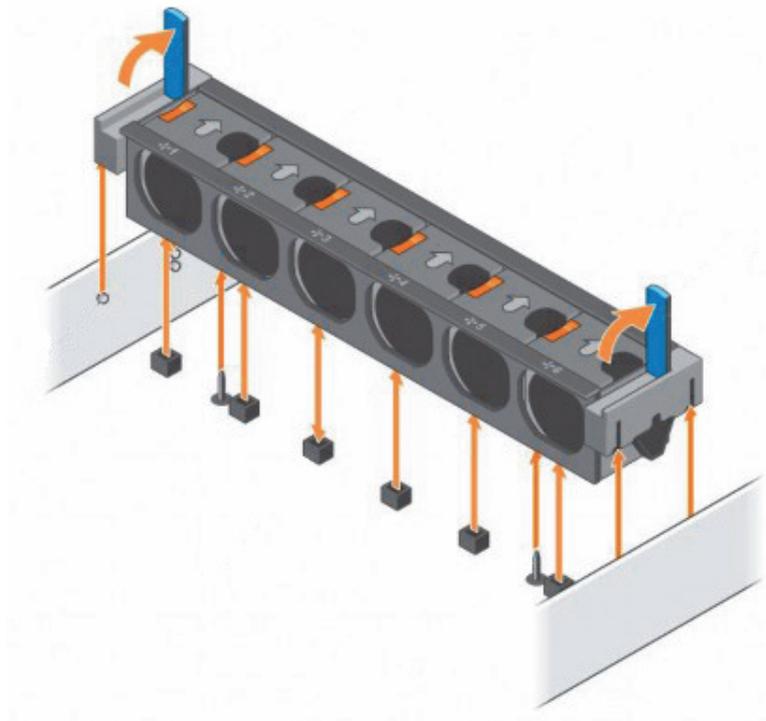
8. If removed, install the front plate as described in chapter “Mount the Front Plate” on page 93.

## Replacing a Cooling Fan Assembly

- Requirements:
- ✓ Follow the safety guidelines listed in chapter “Safety Instructions” on page 90 and chapter “Safety” on page 9.
  - ✓ If installed, remove the front plate as described in chapter “Removing the Front Plate” on page 92.
  - ✓ If applicable, remove the system from the rack.
  - ✓ Remove the system cover as described in chapter “Removing the System Cover” on page 94.

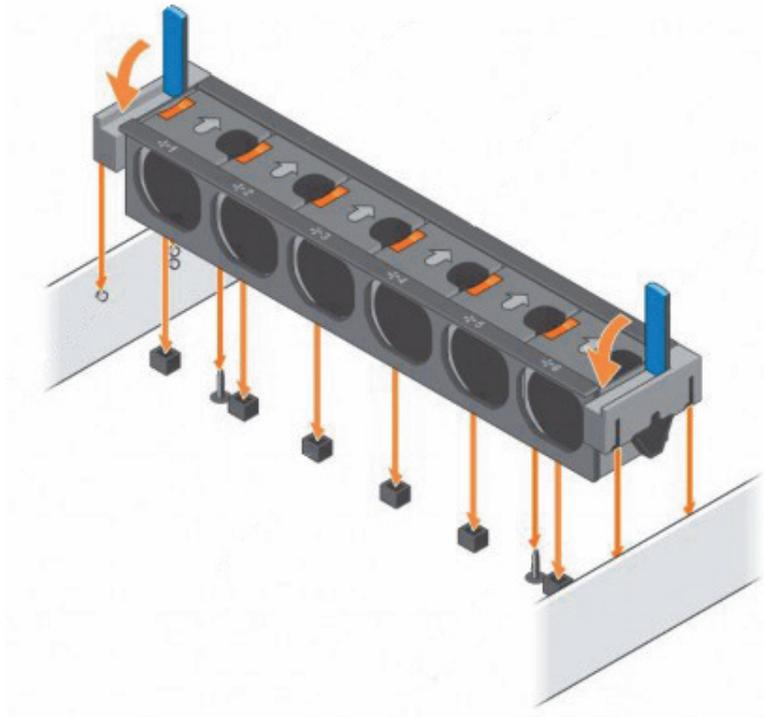
Perform the following steps:

1. Unlock the cooling fan assembly from the chassis by lifting the release levers.
2. Lift the cooling fan assembly out of the chassis.



3. Align the slots on the cooling fan assembly with the guide pins on the chassis.
4. Slide the new cooling fan assembly into the chassis.

5. Lock the new cooling fan assembly into the chassis by lowering the release levers until firmly seated.



6. If removed, install the front plate as described in chapter “Mount the Front Plate” on page 93.
7. Install the system cover as described in chapter “Installing the System Cover” on page 95.

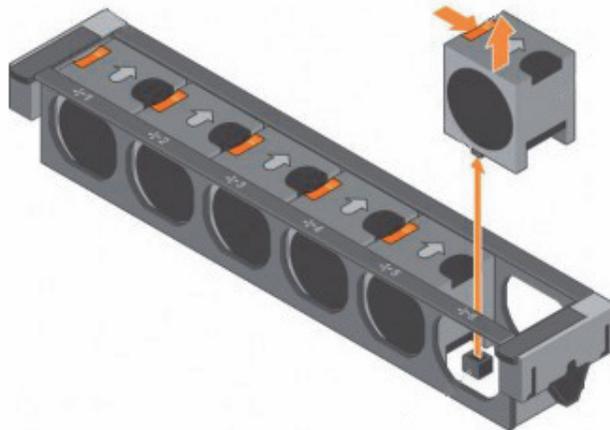
## Replacing a Cooling Fan

- Requirements:
- ✓ Follow the safety guidelines listed in chapter “Safety Instructions” on page 90 and chapter “Safety” on page 9.
  - ✓ If installed, remove the front plate as described in chapter “Removing the Front Plate” on page 92.
  - ✓ If applicable, remove the system from the rack.
  - ✓ Remove the system cover as described in chapter “Removing the System Cover” on page 94.

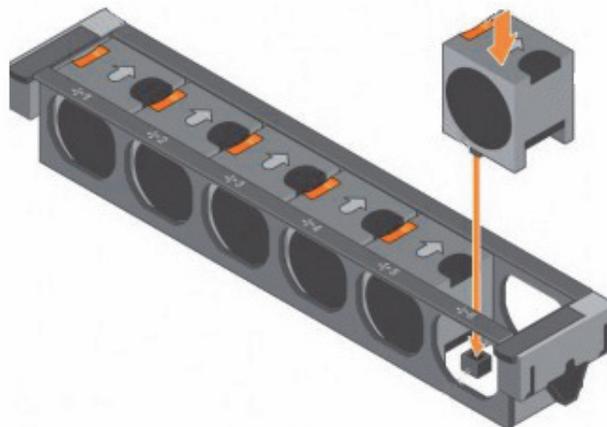
<b>⚠ CAUTION</b>	<p><b>Cooling Problems</b>          The cooling fans are hot-swappable, but to maintain proper cooling while the system is on, it is important to replace only one fan at a time.</p> <p><b>Replace only one fan at a time.</b></p>
------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Perform the following steps:

1. Press the fan release tab and lift the cooling fan out of the cooling fan assembly.



2. Align the connector at the base of the cooling fan with the connector on the system board.
3. Slide the new cooling fan into the securing slot until the tab locks into place.



4. If applicable, install the system into the rack.



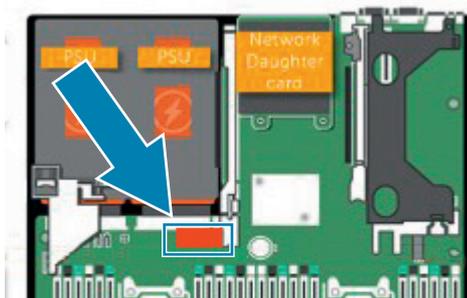
5. If removed, install the front plate as described in chapter “Mount the Front Plate” on page 93.
6. Install the system cover as described in chapter “Installing the System Cover” on page 95.

## Replacing the Internal USB Memory Key

- Requirements:
- ✓ Follow the safety guidelines listed in chapter “Safety Instructions” on page 90 and chapter “Safety” on page 9.
  - ✓ If installed, remove the front plate as described in chapter “Removing the Front Plate” on page 92.
  - ✓ If applicable, remove the system from the rack.
  - ✓ Remove the system cover as described in chapter “Removing the System Cover” on page 94.

Perform the following steps:

1. Remove the USB memory key from the USB port.



2. Insert the replacement USB memory key into the USB port.
3. If applicable, install the system into the rack.
4. If removed, install the front plate as described in chapter “Mount the Front Plate” on page 93.
5. While booting, press **[F2]** to enter System Setup and verify that the system detects the USB memory key.
6. Install the system cover as described in chapter “Installing the System Cover” on page 95.



---

# Transport

This chapter includes the following sections:

- "Safety Notes" (page 110)
- "Packing the System" (page 111)



## Safety Notes

VENICE S is a very sensitive device. Handle it with great care. Especially the disks of the system must be handled with great care.



Fragile. Avoid shocks or vibrations. For longer distances use a lifting device.



Keep dry.

### **DANGER**

#### **Risk of injury while handling component with heavy weight**

Improper handling of the VENICE S can cause substantial damage to personnel and equipment by falling or overturning.

- VENICE S must be lifted and carried by two people on both sides.
- It is preferable to use lifting devices and means of transport.
- Beware of the crushing hazard when working with heavy loads.

## Packing the System

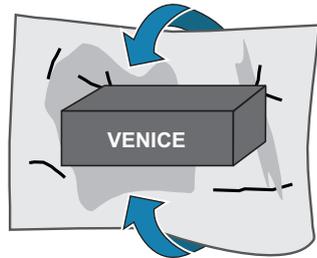
Perform the following steps:

**NOTICE****Transportation Damage**

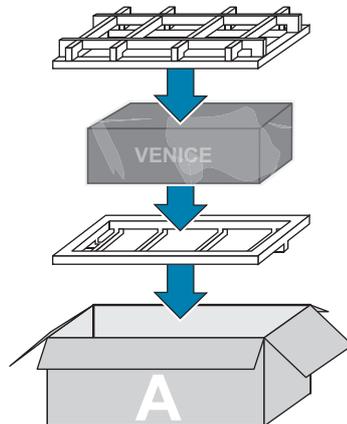
Warranty will be void if not using the original packing for transportation.

Keep the original packing and use it in case of transportation. If you do not have the original packing anymore, use a similar structured packing for transportation. **Rohde & Schwarz** cannot be held liable for transportation damages.

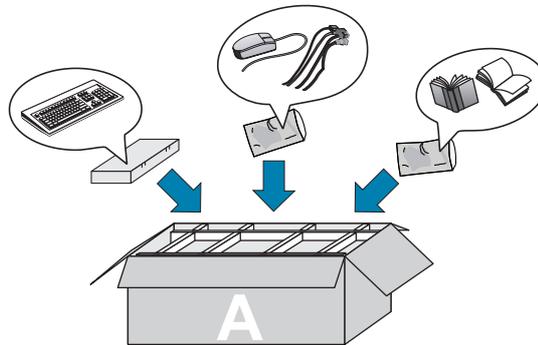
1. Wrap the video system in foil.



2. Pack the video system in box A with foam.

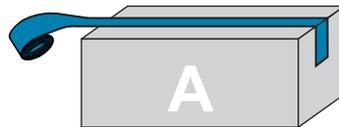


**3. Pack the accessories.**



**4. Add filling material so that the contents of your package are unable to move around inside the box.**

**5. Close box A.**



The system has been packed.



---

# Troubleshooting

This chapter includes the following section:

- "Safety First - For you and your System" (page 114)
- "Troubleshooting External Connections" (page 115)
- "Troubleshooting the Video Subsystem" (page 116)
- "Troubleshooting a USB Device" (page 117)
- "Troubleshooting a Wet System" (page 118)
- "Troubleshooting Power Supply Units" (page 119)
- "Troubleshooting Power Source Problems" (page 119)
- "Power Supply Unit Problems" (page 119)
- "Troubleshooting Cooling Problems" (page 121)
- "Troubleshooting Cooling Fans" (page 121)
- "Troubleshooting an Internal USB Key" (page 122)



## Safety First - For you and your System

**⚠ CAUTION**

### Warranty Claims

Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Rohde & Schwarz is not covered by your warranty.

**Read and follow the safety instructions that are shipped with your product.**



## Troubleshooting External Connections

Before troubleshooting any external devices, ensure that all external cables are securely attached to the external connectors on your system before troubleshooting any external devices.



## Troubleshooting the Video Subsystem

Perform the following steps:

1. Check the cable connections (power and display) to the monitor.
2. Check the video interface cabling from the system to the monitor.
3. Run the appropriate diagnostic test.

If the tests run successfully, the problem is not related to video hardware. If the tests fail, contact your local vendor or Rohde & Schwarz directly.

## Troubleshooting a USB Device

Follow these steps to troubleshoot a USB keyboard or mouse. For other USB devices, contact your local vendor or Rohde & Schwarz GmbH & Co. KG directly.

Perform the following steps:

1. Disconnect the keyboard and/or mouse cables from the system and reconnect them.
2. If the problem persists, connect the keyboard and/or mouse to another USB port on the system.
3. If the problem is resolved, restart the system, enter System Setup, and check if the non-functioning USB ports are enabled.



Older operating systems may not support USB 3.0.

4. Check if USB 3.0 is enabled in System Setup. If enabled, disable it and see if the issue is resolved.
5. If the problem is not resolved, replace the keyboard and/or mouse with a known working keyboard or mouse.

If all troubleshooting fails, contact your local vendor or Rohde & Schwarz directly.



## Troubleshooting a Wet System

Perform the following steps:

1. Turn off the system and attached peripherals, and disconnect the system from the electrical outlet.
2. Contact Rohde & Schwarz.

# Troubleshooting Power Supply Units

## Troubleshooting Power Source Problems

Perform the following steps:

1. Press the power button to ensure that your system is turned on. If the power indicator does not glow when the power button is pressed, press the power button firmly.
2. Plug in another working power supply unit to ensure that the system board is not faulty.
3. Ensure that no loose connections exist.  
For example, loose power cables.
4. Ensure that the power source meets applicable standards.
5. Ensure that there are no short circuits.
6. Have a qualified electrician check the line voltage to ensure that it meets the needed specifications.

## Power Supply Unit Problems

Perform the following steps:

1. Ensure that no loose connections exist.  
For example, loose power cables.
2. Ensure that the power supply handle/LED indicates that the power supply is working properly.
3. If you have recently upgraded your system, ensure that the power supply unit has enough power to support the new system.
4. If you have a redundant power supply configuration, ensure that both the power supply units are of the same type and wattage.  
If the LED You may have to upgrade to a higher wattage power supply unit.
5. Ensure that you use only power supply units with the Extended Power Performance (EPP) label on the back.



6. Reseat the power supply unit.

**NOTE: After installing a power supply unit, allow several seconds for the system to recognize the power supply unit and determine if it is working properly.**

If the problem persists, contact your local vendor or Rohde & Schwarz directly.

## Troubleshooting Cooling Problems

Ensure that the following conditions exist:

- System cover, cooling shroud, EMI filler panel, memory module blank, or back filler bracket is not removed.
- Ambient temperature is not higher than the system specific ambient temperature.
- External airflow is not obstructed.
- A cooling fan is not removed or has not failed.
- The expansion card installation guidelines have been followed.

### Troubleshooting Cooling Fans

- Requirements:
- ✓ Follow the safety guidelines listed in chapter “Safety Instructions” on page 90 and chapter “Safety” on page 9.
  - ✓ If installed, remove the front plate as described in chapter “Removing the Front Plate” on page 92.
  - ✓ If applicable, remove the system from the rack.
  - ✓ Remove the system cover as described in chapter “Removing the System Cover” on page 94.



The fan number is referenced by the systems management software. In the event of a problem with a particular fan, you can easily identify and replace it by noting down the fan numbers on the cooling fan assembly.

Perform the following steps:

1. Reseat the fan or the fan's power cable.
2. Install the system cover as described in chapter “Installing the System Cover” on page 95.
3. Restart the system.

If the problem persists, contact your local vendor or Rohde & Schwarz directly.



## Troubleshooting an Internal USB Key

Perform the following steps:

1. Enter System Setup and ensure that the **USB key port** is enabled on the **Integrated Devices** screen.
2. Turn off the system and attached peripherals, and disconnect the system from the electrical outlet.
3. Remove the system cover as described in "Removing the System Cover" on page 94.
4. Locate the USB key and reseal it.
5. Install the system cover as described in "Installing the System Cover" on page 95.
6. Turn on the system and attached peripherals, and check if the USB key is functioning.
7. If the problem is not resolved, repeat step 2 and step 3.
8. Insert a known working USB key.
9. Install the system cover as described in "Installing the System Cover" on page 95.

If the problem persists, contact your local vendor or Rohde & Schwarz directly.

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