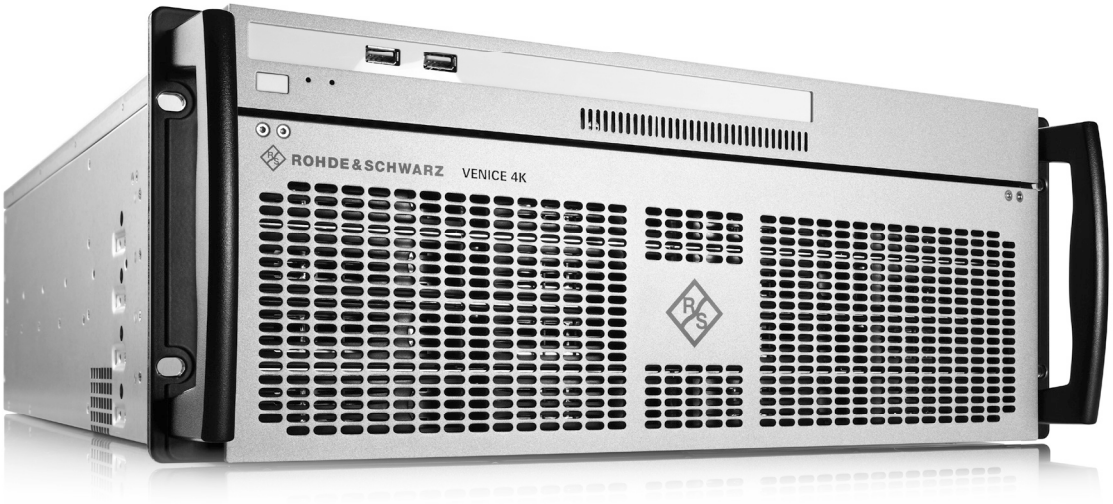
R&S®VENICE 4K
Specifications



ROHDE&SCHWARZ

Data Sheet | Version 03.00

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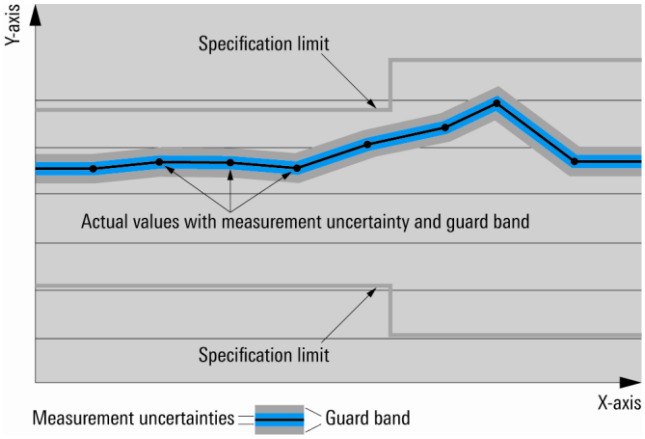
Definitions

General
Product data applies under the following conditions:

- Three hours storage at ambient temperature followed by 30 minutes warm-up operation
- Specified environmental conditions met
- Recommended calibration interval adhered to
- All internal automatic adjustments performed, if applicable

Specifications with limits
Represent warranted product performance by means of a range of values for the specified parameter. These specifications are marked with limiting symbols such as <, ≤, >, ≥, ±, or descriptions such as maximum, limit of, minimum. Compliance is ensured by testing or is derived from the design. Test limits are narrowed by guard bands to take into account measurement uncertainties, drift and aging, if applicable.



Specifications without limits
Represent warranted product performance for the specified parameter. These specifications are not specially marked and represent values with no or negligible deviations from the given value (e.g. dimensions or resolution of a setting parameter). Compliance is ensured by design.

Typical data (typ.)
Characterizes product performance by means of representative information for the given parameter. When marked with <, > or as a range, it represents the performance met by approximately 80 % of the instruments at production time. Otherwise, it represents the mean value.

Nominal values (nom.)
Characterize product performance by means of a representative value for the given parameter (e.g. nominal impedance). In contrast to typical data, a statistical evaluation does not take place and the parameter is not tested during production.

Measured values (meas.)
Characterize expected product performance by means of measurement results gained from individual samples.

Uncertainties
Represent limits of measurement uncertainty for a given measurand. Uncertainty is defined with a coverage factor of 2 and has been calculated in line with the rules of the Guide to the Expression of Uncertainty in Measurement (GUM), taking into account environmental conditions, aging, wear and tear.

Device settings and GUI parameters are indicated as follows: “parameter: value”.

Typical data as well as nominal and measured values are not warranted by Rohde & Schwarz.

At a glance

The R&S®VENICE 4K ingest and production server enables TV studios to set up file-based studio production workflows in 4K UHD-1 which resemble HD workflows in their simplicity. R&S®VENICE 4K by Rohde & Schwarz is the company's answer to the increasing demand for production of 4K UHD-1 content.

R&S®VENICE 4K allows direct recording in native 4K UHD-1 without any time-consuming stitching processes. The material is synchronously converted to HD-SDI and saved as a file. This parallel generation of both HD and 4K UHD-1 content provides TV studios with a feasible transition option until content is broadcast entirely in 4K UHD-1.

R&S®VENICE 4K offers production freedom as workflows can easily and flexibly be adjusted to meet changing needs.

Key facts

- 4K UHD-1 ingest and playout platform
- Apple ProRes, Sony XAVC Class 480 and Avid DNxHR support
- Multi-codec capability and best-in-class picture quality thanks to software encoding
- Integrated HD file generation for 4K UHD-1/HD parallel production
- Real-time HD down-conversion on dedicated HD-SDI output
- Direct access to external storage (SAN, NAS) for reduced or eliminated transfer times
- Rich set of optional software production tools

Specifications

System configuration	• 4RU rack mount • up to 14 front-mounted hot-swappable media hard drives or SSDs • 1+1 redundant front-mounted hot-swappable operating system hard drives • 1+1 redundant hot-swappable power supply • 2 × 10 Gigabit Ethernet ports • 2 USB 3.0 ports (rear) • 2 USB 2.0 ports (rear) • Linux operating system

Video I/O formats

SDI 1.5G single link		
SMPTE 274M	1080i, 1080p, 1080PsF	23.98 fps, 25 fps, 29.97 fps
SMPTE 296M	720p	23.98 fps, 25 fps, 29.97 fps, 50 fps, 59.94 fps
SDI 3G single link (level A or B)		
SMPTE 425	1080p	50 fps, 59.94 fps
SDI 6G quad link		
SMPTE 2036	2160p	25 fps, 29.97 fps
SDI 12G quad link (level A or B)		
SMPTE 2036	2160p	50 fps, 59.94 fps

Channel configurations

VENICE 4K can either be set to UHD-1 or HD operation.

R&S®VENICE 4K, 2 channels		
UHD-1		• two bidirectional UHD-1 channels • two HD downconvert output channels (locked to UHD-1 channel) • optional transform functionality per channel
HD		two bidirectional HD channels

Connectivity (inputs and outputs)

HD/SDI	input video	4 × 1.5G/3G BNC connectors per channel
	output video	4 × 1.5G/3G BNC connectors per channel
Genlock	reference sync input	bi-level, tri-level with dedicated BNC connector
RS-422 serial control		2 × RJ-45 per channel with breakout cable to 9-pin D-Sub
LTC	input	XLR (female)
	output	XLR (male)
AES/EBU audio input/output		• 2 × DB25 per channel with optional XLR breakout cable • 16 audio channels AES/EBU
Network 10 Gigabit Ethernet		• 2 x RJ45
Additional FC/network cards	optional	

Audio

Input		• 8 pairs (16 channels) DB25 balanced (AES/EBU) with optional DB25 to XLR break out cable • 8 pairs (16 channels) embedded BNC
Output		• 8 pairs (16 channels) DB25 balanced (AES/EBU) with optional DB25 to XLR break out cable • 8 pairs (16 channels) embedded BNC
Sample precision		16 bit, 24 bit or 32 bit PCM, 48 kHz
Compressed audio pass-through		Dolby® E
Compressed audio playback		Dolby® Digital (AC-3; TS, AVI, MP4), MPEG-1 layer 2 (MP2)

Codecs

UHD-1		• XAVC-Intra Class 300 and Class 480 • Avid DNxHR • Apple ProRes
HD 1080p/720p		DVCPro100, XDCAM HD (RDD09), XDCAM EX, Avid DNxHD, AVC-Intra50, AVC-Intra100, AVC-Intra200, Apple ProRes, YUV422, MPEG-2 (TS), MPEG-4 (TS), GXF, BMP, CIN, DPX, DV-DIF, JPEG, LXF, TGA, TIFF

For a comprehensive list of codecs please refer to the supported file formats document for R&S VENICE 4K.

Image processing and timecode

Image processing	in playout mode	up/down scaling (no framerate adjustment)
	in UHD-1 ingest mode	parallel HD file creation
Timecode	serial	RS-422
	LTC	balanced analog I/O per channel
	HD/SDI	• HD HANC/VANC • read, generate and write discontinuous ATC/LTC, ATC/VITC1 and 2

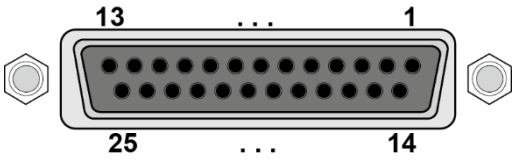
Protocols, file interchange and file ingest

Protocols	RS-422 serial	Sony 9-pin protocol
	RS-422 serial	video disc protocol (VDCP)
	TCP	FIMS capture
	TCP	FIMS transform
	TCP	MOS 3.8
	TCP	simple network management protocol (SNMP)
	TCP	IPMI
File interchange	FTP	active and passive FTP, FXP
	SMB	
	R&S®Spycer	full license included
File ingest	R&S®Spycer direct media ingest	• GFCAM • P2 • SxS • XDCAM

Pinout information

This section provides pinout information about particular connectors provided by the R&S®VENICE 4K.

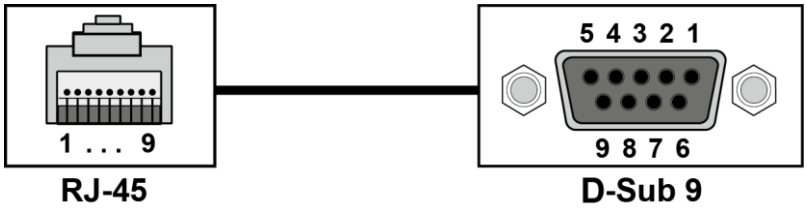
Digital audio (Tascam assignment)



25-pin D-Sub connector (external view, female on interface).

	Pin no.	Signal
Channels 1 to 8	1	audio out CH 7/8 (+)
	2	GND
	3	audio out CH 5/6 (–)
	4	audio out CH 3/4 (+)
	5	GND
	6	audio out CH 1/2 (–)
	7	audio in CH 7/8 (+)
	8	GND
	9	audio in CH 5/6 (–)
	10	audio in CH 3/4 (+)
	11	GND
	12	audio in CH 1/2 (–)
	13	–
	14	audio out CH 7/8 (–)
	15	audio out CH 5/6 (+)
	16	GND
	17	audio out CH 3/4 (–)
	18	audio out CH 1/2 (+)
	19	GND
	20	audio in CH 7/8 (–)
	21	audio in CH 5/6 (+)
	22	GND
	23	audio in CH 3/4 (–)
	24	audio in CH 1/2 (+)
	25	GND
Channels 9 to 16	1	audio out CH 15/16 (+)
	2	GND
	3	audio out CH 13/14 (–)
	4	audio out CH 11/12 (+)
	5	GND
	6	audio out CH 9/10 (–)
	7	audio in CH 15/16 (+)
	8	GND
	9	audio in CH 13/14 (–)
	10	audio in CH 11/12 (+)
	11	GND
	12	audio in CH 9/10 (–)
	13	–
	14	audio out CH 15/16 (–)
	15	audio out CH 13/14 (+)
	16	GND
	17	audio out CH 11/12 (–)
	18	audio out CH 9/10 (+)
	19	GND
	20	audio in CH 15/16 (–)
	21	audio in CH 13/14 (+)
	22	GND
	23	audio in CH 11/12 (–)
	24	audio in CH 9/10 (+)
	25	GND

Breakout cable



RS-422 (RJ-45 (RIB7.0) male to D-Sub 9 female, external view).

RJ-45 pin no.	Signal	D-Sub 9 pin no.
3	TX (+)	3
6	TX (–)	8
5	RX (+)	7
4	RX (–)	2
1	ground	4, 6
2	reserved	5
7, 8	not connected	1, 9

General data

Environmental conditions		
Temperature	operating temperature range	+15 °C to +25 °C
	permissible temperature range	+10 °C to +30 °C
	storage temperature range	0 °C to +50 °C
Damp heat	operation	10 % to 80 % relative humidity at +30 °C
	storage	up to 85 % at +30 °C
Power rating		
Rated voltage		100 V to 240 V AC (± 10 %)
Rated frequency		50 Hz to 60 Hz (± 5 %)
Rated current		5.8 A to 2.6 A (× 4) according to type plate
Product conformity		
CE marking		in line with • EMC Directive 2004/108/EC • Low Voltage Directive 2006/95/EC
FCC rating		class A
Dimensions	W × H × D	480 mm × 176 mm × 710 mm (18.9 in × 6.9 in × 28.0 in) (19", 4 RU)
Weight	with drives	approx. 39 kg (86 lb)

Ordering information

Designation	Type	Order No.
Base units		
R&S®VENICE 4K, 2 channels	R&S®VEN4K	2900.9721.00
Storage options		
4.8 Tbyte SSD Media Storage	R&S®VEN4K-B143	2900.9767.00
6.7 Tbyte SSD Media Storage	R&S®VEN4K-B104	2906.0532.02
9.6 Tbyte SSD Media Storage	R&S®VEN4K-B105	2906.0549.02
13.4 Tbyte SSD Media Storage	R&S®VEN4K-B106	2906.0555.02
Quantum SNFS 5 License	R&S®VEN-K122	2900.9509.00
Functionality options		
Transform Option for 2 Channels	R&S®VEN4K-K112	2900.9780.00
Software options		
R&S®VENICE Play Server License	R&S®VEN-K120	2900.8025.00
R&S®VENICE View	R&S®VEN-K121	2900.3700.00
R&S®VENICE Control Server License for R&S®VENICE 4K, 1 channel	R&S®VEN4K-K123	2906.0690.00
Interface options		
FC/SAN Dual 16 Gbps, PCIe	R&S®CLP-B11	2900.8148.00
10 Gigabit Ethernet Dual Port, Optical SR	R&S®VEN-B321	2900.1595.00
SFP Single Mode Long Range	R&S®VEN-B421	2900.1514.00
Accessories		
Audio Breakout Cable	R&S®VEN-Z200	2900.1672.00
Rackmount Adapter Bracket Set	R&S®VEN2U-B400	2900.8390.00

Service levels agreements

Designation	Type	Order No.
SLA Warranty Upgrade to Advanced	R&S®SWAVEN4K	2902.2460.38
SLA Warranty Upgrade to Premium	R&S®SWPVEN4K	2902.2460.39
SLA Basic 1 Year	R&S®SB1VEN4K	2902.2460.02
SLA Basic 2 Years	R&S®SB2VEN4K	2902.2460.03
SLA Basic 3 Years	R&S®SB3VEN4K	2902.2460.04
SLA Basic Upgrade to Advanced	R&S®SBAVEN4K	2902.2460.46
SLA Advanced 1 Year	R&S®SA1VEN4K	2902.2460.08
SLA Advanced 2 Years	R&S®SA2VEN4K	2902.2460.09
SLA Advanced 3 Years	R&S®SA3VEN4K	2902.2460.10
SLA Advanced Upgrade to Premium	R&S®SAPVEN4K	2902.2460.47
SLA Premium 1 Year	R&S®SP1VEN4K	2902.2460.14
SLA Premium 2 Years	R&S®SP2VEN4K	2902.2460.15
SLA Premium 3 Years	R&S®SP3VEN4K	2902.2460.16

Professional support

Designation	Type	Order No.
Remote System Installation and Integration Support per Day Service technician for remote installation/integration (via Internet) of Rohde & Schwarz file-based media systems/solutions (on business day).	R&S®REMDAY	2902.2482.00
On-Site Installation per Day Service technician for on-site installation of Rohde & Schwarz file-based media systems/solutions (on business day). Travel costs are charged extra. Quantity of days charged will be based on real on-site expense (partial days charged as full days). Travel days are not charged.	R&S®ONSIDAY	2902.2524.00
On-Site Installation per WE-Day Service technician for on-site installation of Rohde & Schwarz file-based media systems/solutions (on weekend day). Travel costs are charged extra. Quantity of days charged will be based on real on-site expense (partial days charged as full days). Travel days are not charged.	R&S®ONSIWEDAY	2902.2530.00
On-Site Support per Day Service technician for on-site support for Rohde & Schwarz file-based media systems/solutions (on business day). Travel costs are charged extra. Quantity of days charged will be based on real on-site expense (partial days charged as full days). Travel days are not charged.	R&S®ONSSDAY	2902.2553.00
On-Site Support per WE Day Service technician for on-site support for Rohde & Schwarz file-based media systems/solutions (on business day). Travel costs are charged extra. Quantity of days charged will be based on real on-site expense (partial days charged as full days). Travel days are not charged.	R&S®ONSSWEDAY	2902.2560.00
On-Site Training per Day On-site training for Rohde & Schwarz file-based media systems/solutions per day. Travel costs are charged extra. Quantity of days charged will be based on real on-site expense (partial days charged as full days). Travel days are not charged.	R&S®ONSTDAY	2902.2576.00
Single Case Second Level Support Single case second level support from Rohde & Schwarz file-based media solution support for remote assistance, issue analysis and debugging. Rate includes all Rohde & Schwarz internal effort related to this single case up to twenty hours of working time. Not included: − Hardware − Third level support − Upgrades − On-site support − Bug fixing Price available only on request. To request a price, please contact: service.dvs@rohde-schwarz.com	R&S®SICA2ND	2900.5655.00
Single Case Third Level Support Single case third level support from Rohde & Schwarz file-based media solution support for issue analysis and debugging. Rate includes all Rohde & Schwarz internal effort related to this single case up to twenty hours of working time. Not included: − Hardware − Upgrades − On-site support − Bug fixing Price available only on request. To request a price, please contact: service.dvs@rohde-schwarz.com	R&S®SICA3RD	2902.2499.00
Travel costs for service technician	R&S®TRCOST	2901.1847.00

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Service that adds value

- Worldwide
- Local and personalized
- Customized and flexible
- Uncompromising quality
- Long-term dependability

Rohde&Schwarz

The Rohde&Schwarz electronics group offers innovative solutions in the following business fields: test and measurement, broadcast and media, secure communications, cybersecurity, monitoring and network testing. Founded more than 80 years ago, the independent company which is headquartered in Munich, Germany, has an extensive sales and service network with locations in more than 70 countries.

Sustainable product design

- Environmental compatibility and eco-footprint
- Energy efficiency and low emissions
- Longevity and optimized total cost of ownership

Certified Quality Management
ISO 9001

Certified Environmental Management
ISO 14001

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