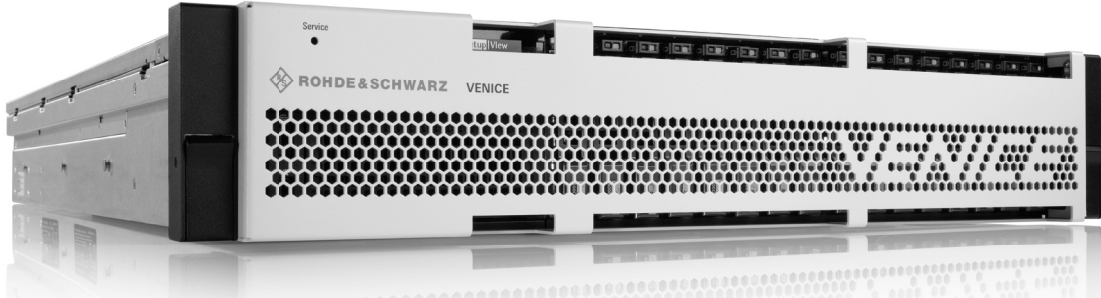


# R&S® VENICE S

## Specifications



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# Definitions

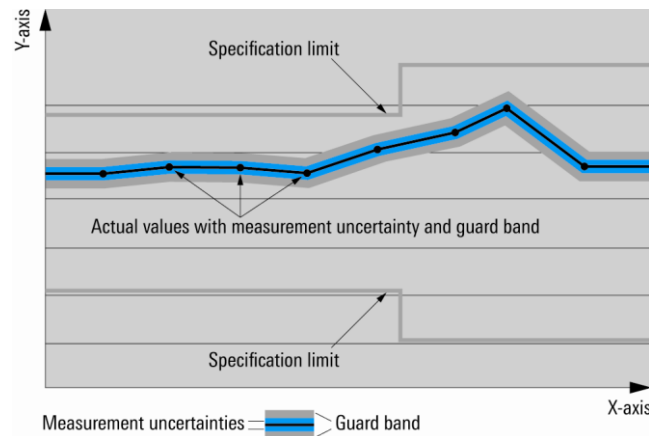
## General

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  $<$ ,  $\leq$ ,  $>$ ,  $\geq$ ,  $\pm$ , 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.

## Key features

R&S®VENICE is a playout and ingest platform that enables broadcasters to deliver content in the most appropriate manner by merging SDI and video-over-IP technologies, empowering the user to migrate to IP-based production at a time and speed that best suits their situation. It provides a single platform covering live production, studio production and channel playout applications. It can be flexibly adapted to customer requirements thanks to its software architecture and scalability. R&S®VENICE comes with a new server core, combined with commercial off-the-shelf hardware and a video I/O board designed by Rohde & Schwarz. This board allows R&S®VENICE to interface with traditional SDI infrastructures and be ready for upcoming IP technologies. The user controls the pace of SDI-to-IP transition.

- Hybrid video-over-IP and baseband capability
- SD to UHD-1/4k p60 video I/O
- HDR ready
- Multicodec capability and best-in-class picture quality thanks to software encoding
- Mixed format and codec back-to-back playout
- Integrated HD file generation for UHD-1/4k and HD parallel production
- Realtime HD downconversion on dedicated HD-SDI output

## Specifications

System configuration	<ul style="list-style-type: none"> <li>• 2 HU rackmount</li> <li>• up to 14 front-mounted, hot-swappable media hard drives</li> <li>• 1+1 redundant front-mounted, hot-swappable operating system hard drives</li> <li>• 1+1 redundant hot-swappable power supplies 750 W (100 V to 240 V AC)</li> <li>• 2 Intel Xeon 12-core processors</li> <li>• 64 Gbyte DDR4 RAM</li> <li>• 2 x 1 Gigabit Ethernet ports</li> <li>• 2 x 10 Gigabit Ethernet ports</li> <li>• 2 x USB 3.0 ports (rear)</li> <li>• 2 x USB 2.0 ports (front)</li> <li>• Linux operating system</li> </ul>
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## Video I/O formats

<b>SDI 270 Mb/s</b>		
SMPTE 259M	525i	29.97 fps
SMPTE 259M	625i	25 fps
<b>SDI 1.5G single link</b>		
SMPTE 274M	1080i, 1080p, 1080PsF	25 fps, 29.97 fps
SMPTE 296M	720p	25 fps, 29.97 fps, 50 fps, 59.94 fps
<b>SDI 3G single link (level A or B)</b>		
SMPTE 425	1080p	50 fps, 59.94 fps
<b>SDI 6G quad link, 4 x 1.5G SDI</b>		
SMPTE 2036	2160p	25 fps, 29.97 fps
<b>SDI 12G quad link (level A or B), 4 x 3G SDI</b>		
SMPTE 2036	2160p	50 fps, 59.94 fps

## Channel configurations

R&S®VENICE can be set to HD/SD or UHD-1 operation.

HD, SD		<ul style="list-style-type: none"> <li>• four bidirectional HD/SD channels</li> <li>• optional transform functionality per channel</li> <li>• automatic aspect ratio conversion (ARC) with active format descriptor (AFD) support</li> </ul>
UHD-1		<ul style="list-style-type: none"> <li>• one bidirectional UHD-1 channel</li> <li>• optional transform functionality</li> <li>• one HD downconversion output channel (locked to UHD-1 channel)</li> </ul>

## Connectivity (inputs and outputs)

HD/SDI	video inputs/outputs	<ul style="list-style-type: none"> <li>• 4 x SFP+ slots with</li> <li>• 4 x 3G high-density BNC (HD-BNC) connectors on two 3G-SDI dual receivers (optional)</li> <li>• 4 x 3G high-density BNC (HD-BNC) connectors on two 3G-SDI dual transmitters (optional)</li> </ul>
HD/SDI down conversion	video output	1 x 3G high-density BNC (HD-BNC)
Genlock	reference sync input	bi-level, tri-level with dedicated high-density BNC (HD-BNC) connector
RS-422 serial control		4 x RJ-45
LTC	input/output	high-density D-Sub 26 (one LTC input and one LTC output per channel with optional breakout cable)
10 Gigabit Ethernet network		2 x SFP+ ports with SFP SR for 10 Gigabit Ethernet
1 Gigabit Ethernet network		2 x RJ-45

## Audio

Input		8 pairs (16 channels), embedded
Output		8 pairs (16 channels), embedded
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, MP4)

## Codecs

SD		IMX30/40/50, DV25, DVCPro25, DVCPro50, Apple ProRes LT/422/HQ
HD 1080p/720p		DVCPro100, XDCAM HD (RDD09), Avid DNxHD, AVC-Intra50, AVC-Intra100, AVC-Intra200, XAVC, Apple ProRes LT/422/HQ
UHD-1		XAVC Intra Class 300 and Class 480, Avid DNxHR, Apple ProRes Proxy/LT/422/HQ

For a comprehensive list of codecs please refer to the supported file formats document for R&S®VENICE S software version 3.5 and software version 4.0.

## Aspect ratio

SD		16:9, 4:3
HD, UHD-1		16:9
Aspect ratio conversion		in HD/SD playout and transform mode
AFD support <sup>1</sup>	standard (read)	WSS, SMPTE 2016
	standard (write)	SMPTE 2016
	override	insert/fill/override embedded AFD metadata on a per-channel basis

## Closed captions and subtitles

Closed caption formats	file insertion, pass-through and generation	scenarist closed caption (SCC)
	standards	EIA-608/708
	up/down/cross conversion <sup>1</sup>	<ul style="list-style-type: none"> <li>support for NTSC EIA-608 to/from EIA-708 conversion</li> <li>support for line 21 to EIA-608/708 conversion</li> </ul>
Subtitle formats	file insertion, pass-through and generation	STL: world standard teletext (WST) subtitles
	standards	WST, OP-42, OP-47
	up/down/cross conversion <sup>1</sup>	support for PAL WST, OP42 to OP47 conversion

## Timecode

Timecode	LTC	balanced analog I/O per channel
	HD/SDI: HD HANC/VANC	read, generate and write discontinuous ATC/LTC, ATC/VITC1 and ATC/VITC2
	HD/SDI: SD VBI	read discontinuous VITC1 and VITC2

<sup>1</sup> Requires R&S®VENICE software version 4.0.

## Image processing

Proxy generation	video encoding	ProRes Proxy/LT/422/HQ, MPEG-2, MPEG-4
	HD/SD encoded frame size	640 x 360 pixel, 640 x 480 pixel
	UHD-1 encoded frame size	1920 x 1080 pixel
UHD-1 to HD downconversion		parallel HD-SDI output

## Protocols, file interchange and file ingest

Protocols	TCP/IP, RS-422 serial	video disk control protocol (VDCP) <sup>1</sup>
	TCP/IP	FIMS capture
	TCP/IP	FIMS transform
	TCP/IP	MOS 3.8
	TCP/IP	simple network management protocol (SNMP)
File interchange	FTP	active and passive FTP, FXP
	SMB	

## General data

<b>Environmental conditions</b>		
Temperature	operating temperature range	+10 °C to +35 °C
	storage temperature range	−40 °C to +65 °C
Relative humidity	operating	10 % to 80 % relative humidity with +29 °C maximum dew point
	storage	5 % to 95 % relative humidity with +33 °C maximum dew point; atmosphere must be noncondensing at all times
<b>Power rating</b>		
Rated voltage		100 V to 240 V AC
Rated frequency		50/60 Hz
Power output	maximum	750 W (100 V to 240 V AC)
	average	414 W (100 V to 120 V AC, 60 Hz) 397 W (200 V to 240 V AC, 50 Hz)
BTU	maximum	2891 BTU/h
	average	1413 BTU/h, 414 W (100 V to 120 V AC, 60 Hz) 1355 BTU/h, 397 W (200 V to 240 V AC, 50 Hz)
<b>Product conformity</b>		
CE marking		in line with the following directives: <ul style="list-style-type: none"> <li>• directive 2014/30/EU</li> <li>• directive 2014/35/EU</li> <li>• directive 2011/65/EU</li> <li>• directive 2009/125/EC</li> </ul>
FCC rating		class A
UL		in line with the following standards: <ul style="list-style-type: none"> <li>• UL 60950-1, second edition, 2011-12-19</li> <li>• CSA C22.2 No. 60950-1-07, second edition, 2011-12</li> </ul>
<b>Dimensions and weight</b>		
Dimensions	W × H × D	482 mm × 87.3 mm × 755.8 mm (18.98 in × 3.44 in × 29.75 in)
Weight	with drives	max. 31.4 kg (69.23 lb)

## Rack support

<b>Rackmounting</b>		
Rails		<ul style="list-style-type: none"> <li>• sliding rails for tool-less mounting in 4-post racks with square or unthreaded round holes or</li> <li>• tooled mounting in 4-post threaded hole racks, with support for tool-less cable management arm</li> </ul>
Cable management		tool-less cable management arm included



## Ordering information

Designation	Type	Order No.
<b>Base units</b>		
R&S®VENICE S400 2RU Turnkey Platform with 14 empty HDD/SSD drive bays (no RAID) 4 x bidirectional HD channels	R&S®VEN400	2906.1300.02
R&S®VENICE S407 2RU Turnkey Platform with 7 Tbyte internal media storage 14 x SAS HDD 600 Gbyte (XFS, RAID 6), 4 bidirectional HD/SD channels	R&S®VEN407	2906.1316.02
R&S®VENICE S414 2RU Turnkey Platform with 14 Tbyte internal media storage 14 x SAS HDD 1.2 Tbyte (XFS, RAID 6), 4 bidirectional HD/SD channels	R&S®VEN414	2906.1322.02
<b>Channel options</b>		
R&S®VENICE Ingest Option, Encoding license for 4 HD/SD channels or 1 UHD-1 channel; UHD-1 ingest requires R&S®VENICE UHD-1 option (R&S®VEN-K130)	R&S®VEN-K104	2906.1900.00
R&S®VENICE UHD-1 Option, UHD-1 decoding and encoding license for 1 UHD-1 channel	R&S®VEN-K130	2906.1800.02
R&S®VENICE Transform Option, Transform license for 4 HD/SD channels or 1 UHD-1 channel; UHD-1 transform requires R&S®VENICE UHD-1 option (R&S®VEN-K130)	R&S®VEN-K131	2906.1822.02
<b>Software options</b>		
R&S®VENICE View	R&S®VEN-K121	2900.3700.00
R&S®VENICE Control Server License, license for 4 channels HD/SD or 1 channel UHD-1 UHD-1 control requires R&S®VENICE UHD-1 option (R&S®VEN-K130)	R&S®VEN-K105	2906.1916.00
R&S®VENICE Play Server License, license for 4 channels HD/SD or 1 channel UHD-1 UHD-1 playout requires R&S®VENICE UHD-1 option (R&S®VEN-K130)	R&S®VEN-K120	2900.8025.00
R&S®Spycer Client License	R&S®SPYS3575	2900.3575.00
<b>Accessories</b>		
3G-SDI SFP Bundle (4 x), 3G-SDI combined input and output SFPs for 4 bidirectional HD/SD channels, includes 2 x 3G dual receivers and 2 x 3G dual transmitters	R&S®VEN-B430	2906.1500.02
R&S®VENICE Accessory Kit including: 10 x HD BNC-to-BNC adapter cables, 4 x RJ-45-to-DB9 connector cables (RS-422), 1 x HD D-Sub 26-to-8 x AES XLR male/female breakout cables	R&S®VEN-B431	2906.1516.02
Spectrum Scale Client License 2 CPU	SBX-K30	2902.2101.02

## Service level agreements

Designation	Order No.
R&S®VENICE S SLA Warranty Upgrade to Advanced	2902.0715.38
R&S®VENICE S SLA Warranty Upgrade to Premium	2902.0715.39
R&S®VENICE S SLA Basic 1 Year	2902.0715.02
R&S®VENICE S SLA Basic 2 Years	2902.0715.03
R&S®VENICE S SLA Basic 3 Years	2902.0715.04
R&S®VENICE S SLA Basic Upgrade to Advanced	2902.0715.46
R&S®VENICE S SLA Advanced 1 Year	2902.0715.08
R&S®VENICE S SLA Advanced 2 Years	2902.0715.09
R&S®VENICE S SLA Advanced 3 Years	2902.0715.10
R&S®VENICE S SLA Advanced Upgrade to Premium	2902.0715.47
R&S®VENICE S SLA Premium 1 Year	2902.0715.14
R&S®VENICE S SLA Premium 2 Years	2902.0715.15
R&S®VENICE S SLA Premium 3 Years	2902.0715.16

## 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 days)	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 days) Travel costs are charged extra. Number 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 days) Travel costs are charged extra. Number 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 days) Travel costs are charged extra. Number 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 weekend days) Travel costs are charged extra. Number 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 business day Travel costs are charged extra. Number 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: <a href="mailto:service.dvs@rohde-schwarz.com">service.dvs@rohde-schwarz.com</a>	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: <a href="mailto:service.dvs@rohde-schwarz.com">service.dvs@rohde-schwarz.com</a>	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.

[www.rohde-schwarz.com](http://www.rohde-schwarz.com)

## 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**

## Rohde & Schwarz GmbH & Co. KG

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R&S®VENICE S

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