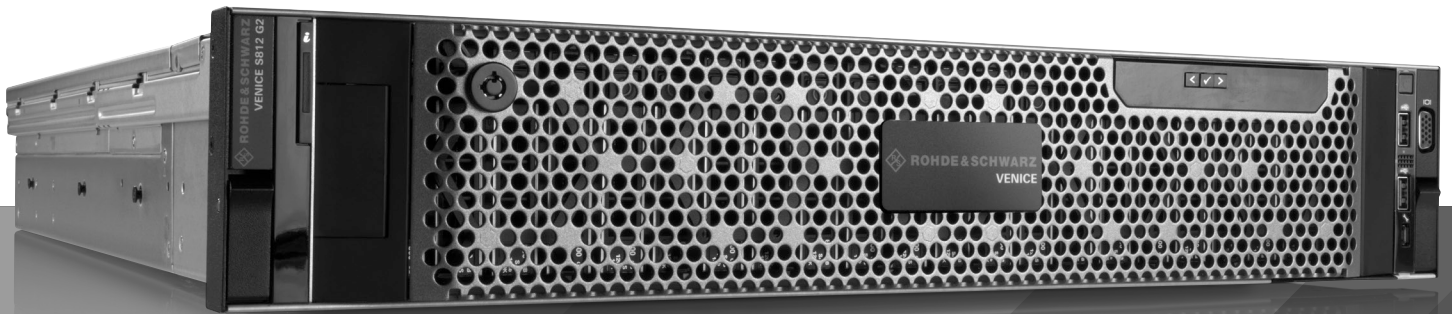


R&S® VENICE S

Specifications



Data Sheet
Version 07.00

ROHDE & SCHWARZ

Make ideas real



CONTENTS

Definitions	3
Key features	4
Specifications.....	5
Video I/O formats.....	5
Channel configurations	5
Connectivity (inputs and outputs).....	6
Audio.....	7
Formats and Codecs	7
Aspect ratio	7
Closed captions and subtitles	7
Timecode	7
Protocols, file interchange and file ingest.....	8
General data (R&S®VENICE-S4XX models).....	9
General data (R&S®VENICE-S8XX models).....	10
Rack support	10
Ordering information	11

Definitions

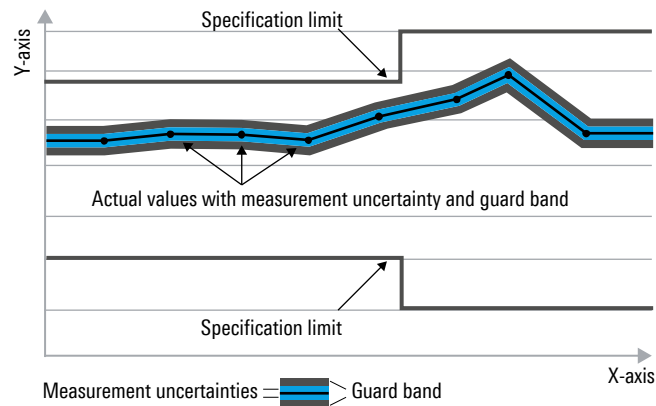
General

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

The new R&S®VENICE platform can be flexibly adapted to your requirements thanks to its software architecture and scalability. For studio and live applications, the best application scenario is always just a software license away. The foundation is our new R&S®VENICE microservice core paired with commercial off-the-shelf hardware and a video I/O board designed by Rohde & Schwarz. This allows R&S®VENICE to connect to traditional SDI infrastructures as well as IP infrastructure. You control the pace of the transition to future architectures.

- On-air reliability
The entire system has no single point of failure due to the redundancy of every system-relevant component.
- Hybrid SDI/IP functionality
Switch from SDI to IP (ST 2110) by simply exchanging the SFP+ modules.
- Scalability
Scales to meet your requirements, no matter how many channels and how much storage capacity or bandwidth you need.
- UHD and HDR-ready
Supports UHD material up to p60. Supports Rec. 709 and Rec. 2020 allowing for high quality productions in HDR.
- High channel density
Up to two UHD p60 channels or up to eight HD p60 channels in just 2 HU.
- Comprehensive software-based codec support
- Interoperability
Highly interoperable, support for various communication protocols such as VDCP, FIMS, MOS.
- Storage options
Can be equipped with up to 24 TB internal RAID storage and natively integrates into spectrum scale infrastructures.

Specifications

System configuration	<ul style="list-style-type: none"> • 2 HU rackmount server chassis • up to 22 front-mounted, hot-swappable media hard drives • 1+1 redundant front-mounted, hot-swappable operating system hard drives • 1+1 redundant hot-swappable power supplies (100 V to 240 V AC) • 2 Intel Xeon™ 12-core processors (R&S®VENICE-S4XX models) • 2 AMD EPYC™ 24-core processors (R&S®VENICE-S8XX models) • up to 128 Gbyte DDR4 RAM • 2 × 1 Gigabit Ethernet ports • 2 × 10 Gigabit Ethernet ports • 2 × USB 3.0 ports (rear) • 2 × USB 2.0 ports (front) • Linux operating system
----------------------	---

Video I/O formats

SDI 270 Mbit/s		
SMPTE 259M	525i	29.97 fps
SMPTE 259M	625i	25 fps
SDI 1.5G single link		
SMPTE 274M	1080i, 1080p, 1080PsF	25 fps, 29.97 fps
SMPTE 296M	720p	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, 4 × 1.5G SDI		
SMPTE 2036	2160p (optional)	25 fps, 29.97 fps
SDI 12G quad link (level A or B), 4 × 3G SDI (SQD and 2SI)		
SMPTE 2036	2160p (optional)	50 fps, 59.94 fps
SDI 12G single link, 1 × 12G SDI		
SMPTE 2082	2160p (optional)	50 fps, 59.94 fps
10 Gbit/s Ethernet		
SMPTE 2110	720p	50 fps, 59.94 fps
	1080i, 1080p	25 fps, 29.97 fps
	1080p	50 fps, 59.94 fps
	2160p (optional)	50 fps

Channel configurations

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

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

Connectivity (inputs and outputs)

HD/SDI	video inputs/outputs	4/8 x SFP+ slots with 4/8 x 3G high-density BNC (HD-BNC) connectors on two/four 3G-SDI dual receivers (optional)
		4/8 x 3G high-density BNC (HD-BNC) connectors on two/four 3G-SDI dual transmitters (optional)
		1/2 x 12G high density BNC (HD-BNC) connectors on one/two 12G-SDI dual receivers (optional)
		1/2 x 12G high density BNC (HD-BNC) connectors on one/two 12G-SDI dual transmitters (optional)
HD/SDI down conversion	video output	1/2 x 3G high-density BNC (HD-BNC)
ST 2110	Video inputs/outputs	4/8 x SFP+ slots with 4/8 x 10Gbit Ethernet transceivers (optional)
Genlock	reference sync input	bi-level, tri-level with dedicated high- density BNC (HD-BNC) connector
RS-422 serial control		4/8 x RJ-45
LTC	input/output	high-density D-Sub 26 connector (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

Formats and 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 HQ/LB/SQ, Apple ProRes Proxy/LT/422/HQ
Proxy generation	HD/SD	
	encoded frame size	640 × 360 pixel, 640 × 480 pixel
	video encoding	MPEG-2, MPEG-4 (MP4, MXF)
	UHD-1	
	encoded frame size	1920 × 1080 pixel
	video encoding	Apple ProRes Proxy/LT/422/HQ (MOV)

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.x.

Aspect ratio

SD		16:9, 4:3
HD, UHD-1		16:9
Aspect ratio conversion		in HD/SD playout and transform mode
AFD support ¹	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 and pass-through	scenarist closed caption (SCC)
	standards	EIA-608/708
	up/down/cross conversion ¹	<ul style="list-style-type: none"> support for NTSC EIA-608 to/from EIA-708 conversion support for line 21 to EIA-608/708 conversion
Subtitle formats	file insertion and pass-through	STL: world standard teletext (WST) subtitles
	standards	WST, OP-42, OP-47
	up/down conversion ¹	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

¹ Requires R&S®VENICE software version 4.0 or higher.

Protocols, file interchange and file ingest

Protocols	TCP/IP, RS-422 serial	video disk control protocol (VDCP) ¹
	TCP/IP	FIMS capture service (v1.07, SOAP)
	TCP/IP	FIMS transform service (v1.07, SOAP)
	TCP/IP	MOS 3.8 (SOAP)
	TCP/IP	Spycer webservice (SOAP)
	TCP/IP	simple network management protocol (SNMP)
	TCP/IP	NMOS (IS04, IS05)
	UDP	SMPTE 2110-20 based transport of professional video over an IP network ¹
	UDP	SMPTE 2110-30 based transport of professional audio over an IP network ¹
	UDP	SMPTE 2110-40 based transport of professional ancillary data over an IP network ¹
File interchange	FTP	active and passive FTP, FXP
	SMB	v1, v2, v3

General data (R&S®VENICE-S4XX models)

Environmental conditions		
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
Power rating		
Rated voltage		100 V to 240 V AC
Rated frequency		50/60 Hz
Power output	maximum	1100 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	4100 BTU/h
	average	1413 BTU/h at 414 W (100 V to 120 V AC, 60 Hz) 1355 BTU/h at 397 W (200 V to 240 V AC, 50 Hz)
Product conformity		
CE marking		in line with the following directives: <ul style="list-style-type: none"> • 2014/30/EU • 2014/35/EU • 2011/65/EU • 2009/125/EC
FCC rating		class A
UL		in line with the following standards: <ul style="list-style-type: none"> • UL 60950-1, second edition, 2011-12-19 • CSA C22.2 No. 60950-1-07, second edition, 2011-12
Dimensions and weight		
Dimensions	W × H × D	482 mm × 87.3 mm × 755.8 mm (18.98 in × 3.42 in × 29.58 in)
Weight	with drives	max. 31.4 kg (69.23 lb)

General data (R&S®VENICE-S8XX models)

Environmental conditions		
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
Power rating		
Rated voltage		100 V to 240 V AC
Rated frequency		50/60 Hz
Power output	maximum	1100 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	4100 BTU/h
	average	1413 BTU/h at 414 W (100 V to 120 V AC, 60 Hz) 1355 BTU/h at 397 W (200 V to 240 V AC, 50 Hz)
Product conformity		
CE marking		in line with the following directives: <ul style="list-style-type: none"> • 2014/30/EU • 2014/35/EU • 2011/65/EU • 2009/125/EC
FCC rating		class A
UL		in line with the following standards: <ul style="list-style-type: none"> • UL 60950-1, second edition, 2011-12-19 • CSA C22.2 No. 60950-1-07, second edition, 2011-12
Dimensions and weight		
Dimensions	W × H × D	482 mm × 86.8 mm × 751.5 mm (18.98 in × 3.42 in × 29.6 in)
Weight	with drives	max. 33.4 kg (73.6 lb)

Rack support

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

Ordering information

In order to determine the right system and professional support to meet your requirements, please contact your local Rohde & Schwarz sales representative.

Dolby® is a registered trademark of Dolby Laboratories. Dolby Digital™, Dolby Digital Plus™ and Dolby E™ are trademarks of Dolby Laboratories.

Service that adds value

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

Rohde & Schwarz

The Rohde & Schwarz technology group is among the trailblazers when it comes to paving the way for a safer and connected world with its leading solutions in test and measurement, technology systems, and networks and cybersecurity. Founded more than 85 years ago, the group is a reliable partner for industry and government customers around the globe. The independent company is headquartered in Munich, Germany and has an extensive sales and service network with locations in more than 70 countries.

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 training

www.training.rohde-schwarz.com

Rohde & Schwarz customer support

www.rohde-schwarz.com/support

