R&S®VENICE 2U
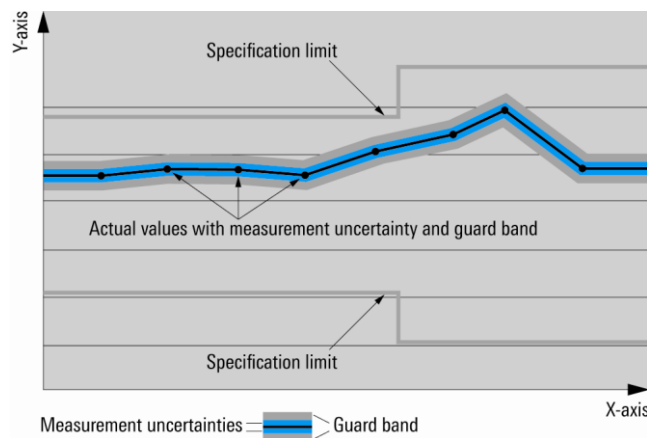# Specifications

ROHDE&SCHWARZ

CONTENTS

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

R&S®VENICE 2U is a future-ready video server for highly optimized file-based TV production workflows. R&S®VENICE 2U manages classic video server tasks such as HD-SDI ingest and studio playout combined with intelligent file-based features such as file ingest, transcoding and media transfer operations. It is especially designed to facilitate content ingest and distribution as well as studio production.

Key facts

- Native support for a variety of storage connections and file systems
- Simple integration into existing system environments via FIMS, MOS and VDCP
- Vast selection of broadcast and production codecs out of the box
- R&S®VENICE remote user interface for control of up to 12 resolution independent channels
- Dual-destination recording to MXF and QuickTime wrappers

Specifications

System configuration	
	• 2RU rack mount
	• up to 10 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 × 1 Gigabit Ethernet ports
	• 2 × SFP+ ports
	• 1 USB 3.0 port (front)
	• 2 USB 2.0 ports (rear)
	• Linux operating system

Video I/O formats

SDI 270 Mb/s		
SMPTE 259M	525i	29.97 fps
SMPTE 259M	625i	25 fps
SDI 1.5G single link		
SMPTE 274M	1080i, 1080p, 1080PsF	23.98 fps, 24 fps, 25 fps, 29.97 fps
SMPTE 296M	720p	23.98 fps, 24 fps, 25 fps, 29.97 fps, 50 fps, 59.94 fps
SDI 3G single link (level A or B)		
SMPTE 425	1080p	
SDI 1.5G dual link		
SMPTE 425	1080p	50 fps, 59.94 fps

Channel configurations

VENICE 2U can either be set to HD/SD or 2K operation.

R&S®VENICE 2U, 2 channels		
HD/SD		• two SD/HD playout channels • two bidirectional SD/HD channels with optional ingest license • optional transform functionality per channel
2K 2048 × 1080p	2K rasters require an ingest or ingest and transform option, and channel usage is limited	• one bidirectional 2K channel with optional ingest license • optional transform functionality per channel
2K 2048 × 1556p (SONY2K)	2K rasters require an ingest or ingest and transform option, and channel usage is limited	• one bidirectional 2K channel with optional ingest license • optional transform functionality per channel

R&S®VENICE 2U, 4 channels		
HD/SD		• four SD/HD playout channels • four bidirectional SD/HD channels with optional ingest license • optional transform functionality per channel
2K 2048 × 1080p	2K rasters require an ingest or ingest and transform option, and channel usage is limited	• two bidirectional 2K channels with optional ingest license • optional transform functionality per channel
2K 2048 × 1556p (SONY2K)	2K rasters require an ingest or ingest and transform option, and channel usage is limited	• two bidirectional 2K channels with optional ingest license • optional transform functionality per channel

Connectivity (inputs and outputs)

HD/SDI	input video	1 × 1.5G/3G BNC connectors per channel
	output video	1 × 1.5G/3G BNC connectors per channel
Genlock (reference sync input)		bi-level, tri-level with dedicated BNC connector
RS-422 serial control		2 × 9-pin D-Sub per channel
LTC	input	XLR mini (female)
	output	XLR mini (male)
AES/EBU audio input/output		• 1 × DB25 per channel with optional XLR breakout cable • 8 audio channels AES/EBU
Network 1 Gigabit Ethernet		2 × RJ-45
Network 10 Gigabit Ethernet	optional	2 × SFP+
Additional FC/network cards available	optional	

Audio

Input		• 4 pairs (8 channels) DB25 balanced (AES/EBU) with optional DB25 to XLR break out cable • 8 pairs (16 channels) embedded BNC
Output		• 4 pairs (8 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

HD 1080p/720p		DVCPro100, XDCAM HD (RDD09), XDCAM EX, Avid DNxHD, AVC-Intra50, AVC-Intra100, AVC-Intra200, XAVC, Apple ProRes, YUV422, MPEG-2 (TS), MPEG-4 (TS), GXF, BMP, CIN, DPX, DV-DIF, JPEG, LXF, TGA, TIFF
SD		IMX30,40, 50, DV25, DVCPro25, DVCPro50, DVCPro100, XDCAM IMX, XDCAM DV, 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
2K 2048 × 1080p		BMP, CINEON, DPX, JPEG, LXF, TGA, TIFF, YUV8/10/16
2K 2048 × 1556p		BMP, CINEON, DPX, JPEG, LXF, TGA, TIFF, YUV8/10/16

Image processing and timecode

Image processing	in ingest and playout mode	up/down scaling (no framerate adjustment)
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 with the R&S®VENICE 2U.

Digital audio (Tascam assignment)
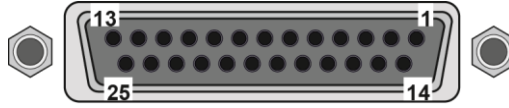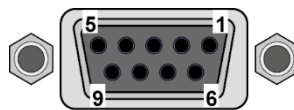

25-pin D-Sub connector (external view; female on interface, male on cable).

	Pin no.	Signal
Channel 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

RS-422 in and RS-422 out

*9-pin D-Sub connector
(external view; female on interface, male on cable).*

	Pin no.	Signal
RS-422 in	1	−
	2	TX_D_CON (−)
	3	RX_D_CON (+)
	4	GND
	5	−
	6	GND
	7	TX_D_CON (+)
	8	RX_D_CON (−)
	9	−

	Pin no.	Signal
RS-422 out	1	–
	2	RX_C_CON (–)
	3	TX_C_CON (+)
	4	GND
	5	–
	6	GND
	7	RX_C_CON (+)
	8	TX_C_CON (–)
	9	–

These connectors will be automatically switched between RS-422 in and RS-422 out by the software depending on the selected operating mode and the selected R&S®VENICE 2U options.

For RS-422 control, R&S®VENICE 2U systems support the standard industrial 9-pin protocol.

High-definition multimedia interface

The HDMI® connector is only optional for the R&S®VENICE 2U.
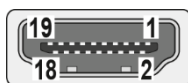
HDMI® connector (external view; female on interface, male on cable).

	Pin no.	Signal
HDMI®	1	TMDS data 2 (+)
	2	TMDS data 2 GND
	3	TMDS data 2 (–)
	4	TMDS data 1 (+)
	5	TMDS data 1 GND
	6	TMDS data 1 (–)
	7	TMDS data 0 (+)
	8	TMDS data 0 GND
	9	TMDS data 0 (–)
	10	TMDS CLK (+)
	11	TMDS CLK GND
	12	TMDS CLK (–)
	13	CEC
	14	– (reserved)
	15	SCL
	16	SDA
	17	DDC CEC GND
	18	+5 V
	19	hot plug detect

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		9 A to 3.7 A (× 2) 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
Korea certification		in line with KC
Dimensions	W × H × D	480 mm × 88 mm × 698 mm (18.9 in × 3.5 in × 27.5 in) (19", 2 RU)
Weight	with drives	approx. 23 kg (51 lb)

Ordering information

Designation	Type	Order No.
Base units		
R&S®VENICE 2U, 2 channels	R&S®VEN2U	2900.7935.00
R&S®VENICE 2U, 4 channels	R&S®VEN2U	2900.7941.00
Storage options		
6 Tbyte Media Storage	R&S®VEN2U-B101	2906.0326.00
9 Tbyte Media Storage	R&S®VEN2U-B102	2906.0332.00
4.8 Tbyte SSD Media Storage	R&S®VEN2U-B103	2900.9580.00
9.6 Tbyte SSD Media Storage	R&S®VEN2U-B105	2906.0584.02
R&S®VENICE Quantum SNFS 5 License	R&S®VEN-K122	2900.9509.00
Functionality options		
Ingest Option for 2 Channels incl. R&S®VENICE Play Server License	R&S®VEN2U-K100	2906.0278.00
Ingest plus Transfer Option for 2 Channels incl. R&S®VENICE Play Server License	R&S®VEN2U-K102	2906.0290.00
Ingest Option for 4 Channels incl. R&S®VENICE Play Server License	R&S®VEN2U-K101	2906.0284.00
Ingest plus Transfer Option for 4 Channels incl. R&S®VENICE Play Server License	R&S®VEN2U-K103	2906.0303.00
Software options		
Avid Workflow Option	R&S®VEN2U-B401	2900.1472.00
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 2U, 2 channels	R&S®VEN2U-K123	2906.0590.00
Interface options		
FC/SAN Dual 8 Gbps, PCIe	R&S®VEN2U-B304	2906.0484.02
10 Gigabit Ethernet Dual Port, Optical SR, PCIe	R&S®VEN-B321	2900.1595.00
HDMI Interface	R&S®VEN2U-B403	2900.3623.00
SFP SR for 10 Gigabit Ethernet	R&S®VEN2U-B402	2900.3752.00
SFP LR Single Mode for 10 Gigabit Ethernet	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®SWAVEN2U	2902.2453.38
SLA Warranty Upgrade to Premium	R&S®SWPVEN2U	2902.2453.39
SLA Basic 1 Year	R&S®SB1VEN2U	2902.2453.02
SLA Basic 2 Years	R&S®SB2VEN2U	2902.2453.03
SLA Basic 3 Years	R&S®SB3VEN2U	2902.2453.04
SLA Basic Upgrade to Advanced	R&S®SBAVEN2U	2902.2453.46
SLA Advanced 1 Year	R&S®SA1VEN2U	2902.2453.08
SLA Advanced 2 Years	R&S®SA2VEN2U	2902.2453.09
SLA Advanced 3 Years	R&S®SA3VEN2U	2902.2453.10
SLA Advanced Upgrade to Premium	R&S®SAPVEN2U	2902.2453.47
SLA Premium 1 Year	R&S®SP1VEN2U	2902.2453.14
SLA Premium 2 Years	R&S®SP2VEN4K	2902.2453.15
SLA Premium 3 Years	R&S®SP3VEN4K	2902.2453.16

Repair service and loaner system

Designation	Type	Order No.
R&S®VENICE 2U Repair at Rohde & Schwarz	R&S®VENS1482	2901.1482.00
R&S®VENICE 2U Loaner System per Month	R&S®VENS1547	2901.1547.00

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

ı Worldwide
ı Local and personalized
ı Customized and flexible
ı Uncompromising quality
ı 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

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

Certified Quality Management
ISO 9001

Certified Environmental Management
ISO 14001

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