Test & Measurement

- sales
- rentals
- calibration
- repair
- disposal

Complimentary Reference Material

This PDF has been made available as a complimentary service for you to assist in evaluating this model for your testing requirements.

TMG offers a wide range of test equipment solutions, from renting short to long term, buying refurbished and purchasing new. Financing options, such as Financial Rental, and Leasing are also available on application.

TMG will assist if you are unsure whether this model will suit your requirements.

Call TMG if you need to organise repair and/or calibrate your unit.

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R&S®DVSG Digital Video Signal Generator

Providing a wide variety of interfaces, test patterns, and test signals

Years of
Driving
Innovation

ROHDE & SCHWARZ

R&S®DVSG
Digital Video
Signal Generator
At a glance

The R&S®DVSG digital video signal generator is a universal platform for generating and playing compressed and uncompressed video and audio signals. It features transport stream (TS) interfaces as well as all common audio/video (AV) interfaces for the latest TV display technology.

The R&S®DVSG is modular in design. Two functional units are available for generating uncompressed analog and digital audio and video signals with a wide variety of characteristics. The AV signal generator option [1] enables the R&S®DVSG to generate video signals synthetically. This means that you can easily define each pixel and test the display equipment under lab conditions. In addition to working with the numerous signals that come with the instrument, you can easily import your own signals.

The AV signal player option provides exactly the type of signals that a display must be able to handle when operated by an end user. This is achieved by generating the AV signals on the basis of MPEG-2 transport streams. In addition to the comprehensive set of signals supplied with the option, you may also use your own recordings of live signals. This means that you can simulate virtually any live situation in the lab.

You can record and play MPEG-2 transport streams by means of the TS player and recorder option. The numerous transport streams supplied with the option are played in a seamless loop. You can also play transport stream recordings of other devices with no problem.

Key facts

- Standard-compliant output over all common audio and video interfaces
- Comprehensive signal libraries and easy import of user-provided signals
- Simulation of real operating conditions
- Support of numerous video formats up to 1080p

[1] Availability planned for September 2008.

R&S®DVSG Digital Video Signal Generator
Benefits and key features

Testing with only one test instrument
▮ Digital video interfaces
▮ Analog video interfaces
▮ Digital audio interfaces
▮ Analog audio interfaces
▮ Support of numerous signal formats
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Test signals and test patterns for any test case
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▮ AV signal player with integrated format conversion
▮ Availability at the press of a button
▷ page 6

Reference signal source for development and testing
▮ Error-free signals
▮ Seamless signals
▷ page 7

Convenient portability
▮ Compact design (three height units)
▮ Integrated display

Quick exchange of signal data (files)
▮ USB interface
▮ Network interface

Fast availability even of large signal collections
▮ Huge hard disk capacity
▮ Support of USB hard disks

Easy operation
▮ Self-explanatory GUI

Cost-efficient solution
▮ Excellent price/performance ratio

Testing with only one test instrument

Modern display equipment products have a large number of different AV interfaces and can handle an almost unimaginable number of video formats. The R&S®DVSG combines these interfaces and a wide variety of video formats in only one instrument:

Digital video interfaces
❚ HDMI/DVI
❚ SDI/HD-SDI

Analog video interfaces
❚ RGB/YPbPr (with sync/tri-level sync)
❚ VGA
❚ S-Video
❚ CCVS
❚ SCART
❚ D4

Digital audio interfaces
❚ HDMI
❚ SDI/HD-SDI (embedded audio)
❚ S/PDIF optical

Analog audio interfaces
❚ SCART (stereo)
❚ RCA (L/R)

Support of numerous signal formats
The R&S®DVSG supports various formats (SD and HD) for the analog and digital interfaces, ranging from PAL and NTSC signals (CCVS) up to 1080p.

Rear view of the R&S®DVSG showing interfaces

Test signals and test patterns for any test case

Rohde & Schwarz offers extensive signal collections for the TS player, the AV signal player, and the AV signal generator.

Signals of the AV signal generator option [2]

The AV signal generator option contains test patterns for testing the functionality of all pixels, the display geometry, signal processing, and filter characteristics. SD as well as HD formats are available.

Signals of the AV signal player option

The AV signal player option contains live sequences with scene cuts, movements, complex pictures, blocking, and other compression artifacts so that you can generate exactly the type of signals that display equipment being operated by an end user must be able to handle.

Transport stream collections

The TS collections for the TS player and recorder support the DVB, ATSC, and ISDB-T standards. For video contents, both MPEG-2 and MPEG-4 in SD and HD resolution are supported. Audio contents are encoded in accordance with MPEG-1/2 layer I or Dolby AC-3. You can find details about features and applications in the "Stream Libraries for Rohde & Schwarz TS Generators" data sheet.

Additional signal generation functions

▮ Any TS recording can be imported and played
▮ The AV signal player enables you easily to select the AV data in the TS in order to generate signals for the AV interface
▮ Transport streams fed to the R&S®DVSG can be used as a live source for generating AV signals
▮ User-generated pictures can easily be imported into the R&S®DVSG for playing

[2] Availability planned for September 2008.

Fast and easy testing

AV signals simultaneously available on different analog and digital interfaces
Usually, the AV signals are simultaneously present at all interfaces provided that the selected formats are compatible with the interface type. You can therefore quickly test display equipment because no switchover is required on the R&S®DVSG.

AV signal player with integrated format conversion
For the AV signal player, you can set the output formats independently of the source material. Thus, you can easily test a variety of formats even if the test signal is present in only one format.

Availability at the press of a button
After selecting the signal file you want, you can play it at the press of a button.

Reference signal source for development and testing

Error-free signals

Unless intentionally specified otherwise for test purposes, the signals are generated error-free at all levels. The TS collection from Rohde & Schwarz has proven to be extremely reliable during years of service around the world.

Seamless signals

Both TS as well as AV signals are played in an endless loop so that a signal is continuously present at the interfaces. The transition from the end to the beginning of the sequence is seamless. For TS, this means that all timing parameters in the TS are calculated and inserted in real-time. In the case of the Rohde & Schwarz TS signals, the video and audio signals are furthermore cut in such a manner that no break in syntax can be detected even by a decoder. Thus, you can be sure that any errors detected originate from the equipment being tested, not the signal source.
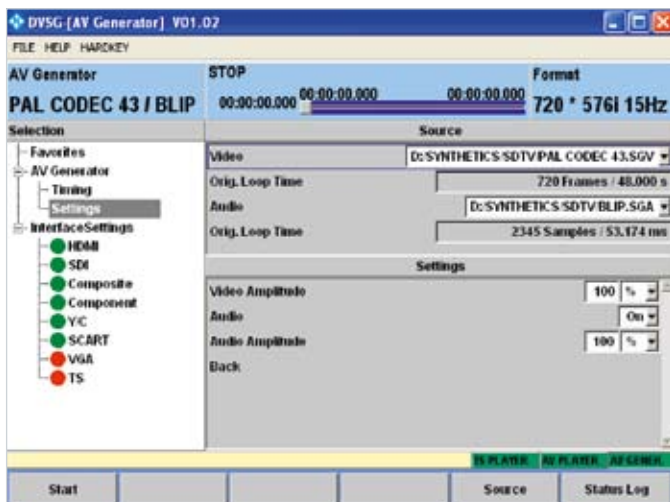
R&S®DVSG
Digital Video
Signal Generator
Typical applications

Use of the R&S®DVSG as an AV player and generator

The AV signal player and generator options are designed for the testing of modern display equipment such as flat screens, TV sets, and projectors. You can test the equipment's display, signal processing, and interfaces. Owing to its broad scope of features, the R&S®DVSG is ideal for use in R&D, production, quality assurance, and by test houses.

The AV signal generator option enables the R&S®DVSG to generate video signals synthetically. You can thus explicitly define each pixel and test the display equipment under lab conditions. This capability allows you to optimally test essential characteristics such as the functionality of all pixels, the display geometry, as well as the signal processing/filter characteristics.
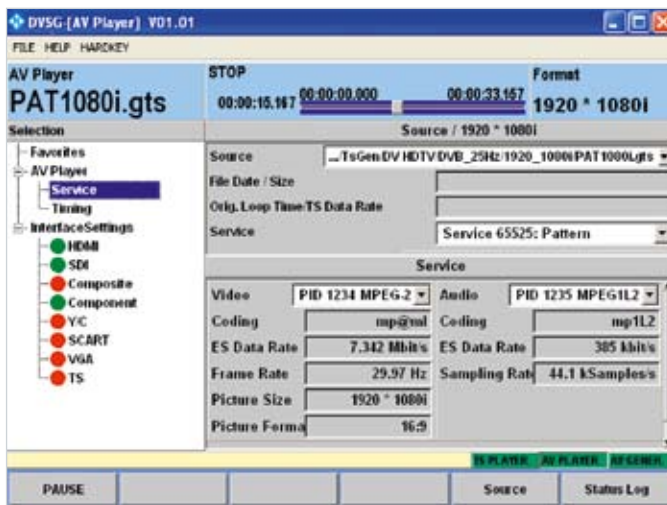
The AV signal player option enables the R&S®DVSG to generate live sequences with scene cuts, movements, complex pictures, blocking, and other compression artifacts. You can thus test the processing of signals such as they occur in the typical use of display equipment. Tests of this type are particularly important for R&D and test house requirements. In R&D, you can optimize the display equipment for use under realistic conditions. Test houses can test the quality of the display equipment even more accurately. The capability to generate the AV signals on the basis of MPEG-2 TS allows you also to use recordings of live signals from throughout the world. You can therefore easily simulate critical operating conditions in order to optimize the display technology and, if applicable, to perform troubleshooting.
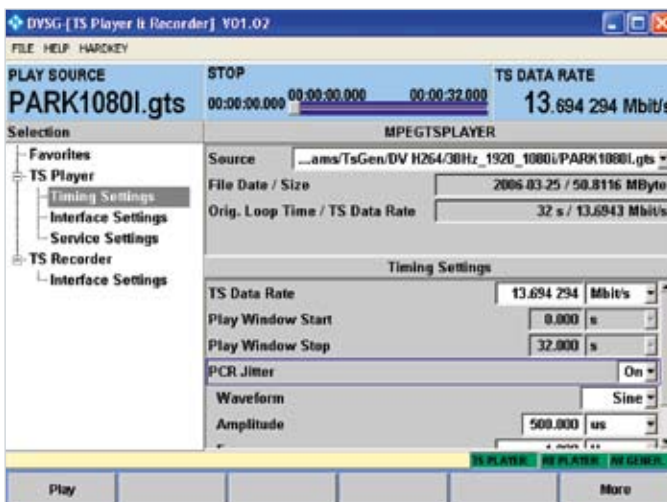

GUI of the AV signal generator option; "Settings" view for configuring the audio and video elements

Use of the R&S®DVSG as a TS player and recorder

As a transport stream player and recorder (TS player and recorder option), the R&S®DVSG is a valuable R&D tool for testing set-top boxes, multiplexers, decoders, and their components such as chips and boards. When it comes to production and the lab, the R&S®DVSG can be combined with a test modulator to function as a signal source in order to test set-top boxes and TV sets. For network operators and program providers, the R&S®DVSG serves as both an economical recorder for recording live signals as well as a source for setting up networks.

GUI of the AV signal player option; "Services" view for selecting the audio/video elements
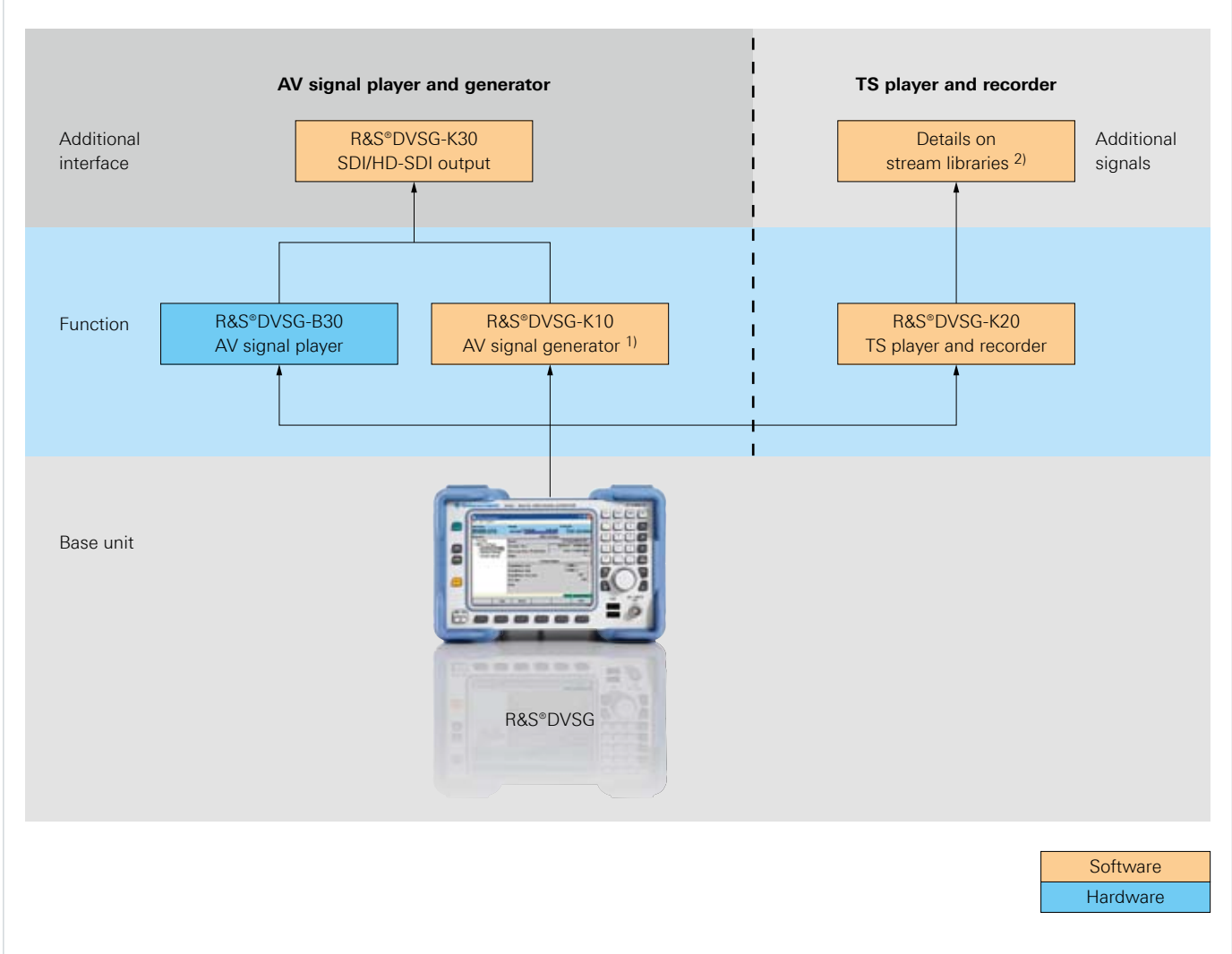

GUI of the TS player and recorder option; "Timing" view of the player function for configuring the section to be played and further timing parameters

R&S®DVSG
Configuration rules

R&S®DVSG digital video signal generator

	AV signal player and generator			**TS player and recorder**	
Additional interface	R&S®DVSG-K30 SDI/HD-SDI output			Details on stream libraries [2]	Additional signals
Function	R&S®DVSG-B30 AV signal player	R&S®DVSG-K10 AV signal generator [1]		R&S®DVSG-K20 TS player and recorder	
Base unit		R&S®DVSG			

Software
Hardware

[1] Availability planned for September 2008.
[2] See ordering information (Stream Libraries/TS creation tool) and the "Stream Libraries for Rohde&Schwarz TS Generators" data sheet.

Ordering information

Designation	Type[1]	Order No.
Base unit		
Digital Video Signal Generator	R&S®DVSG	2113.0008.02
including: quick start guide, operating manual with firmware on CD, power cable		
AV player and generator options		
AV Signal Player	R&S®DVSG-B30	2113.0237.02
AV Signal Generator[2]	R&S®DVSG-K10	2113.0314.02
SDI/HD-SDI Output	R&S®DVSG-K30	2113.0337.02
TS player and recorder options		
TS Player and Recorder	R&S®DVSG-K20	2113.0320.02
Stream libraries		
HDTV Sequences	R&S®DV-HDTV	2085.7650.02
H.264 Stream Library	R&S®DV-H264	2085.9052.02
DVB-H Stream Library	R&S®DV-DVBH	2085.8704.02
Test Card M Sequences	R&S®DV-TCM	2085.7708.02
ISDB-T Stream Library	R&S®DV-ISDBT	2085.9146.02
TS creation tool		
Advanced Stream Combiner (dongle for USB interface)	R&S®DV-ASC	2085.8804.03
Rack installation		
19" Adapter (R&S®DVSG with spare slot)	R&S®ZZA-T34	1109.4464.00
19" Adapter (R&S®DVSG with second instrument)	R&S®ZZA-T33	1109.4458.00
Recommended extras		
Keyboard with USB Interface (US keyboard)	R&S®PSL-Z2	1157.6870.04
Mouse with USB Interface, optical	R&S®PSP-B6	1134.8201.13
Printed operating manual (English)		2113.1862.12
Service options (Service options can only be ordered in connection with the purchase of an instrument.)		
Repair service		
One-Year Repair Service following the warranty period	R&S®RO2DVSG	please contact your local sales office
Two-Year Repair Service following the warranty period	R&S®RO3DVSG	please contact your local sales office
Four-Year Repair Service following the warranty period	R&S®RO5DVSG	please contact your local sales office
Calibration service		
Two-Year Calibration Service	R&S®CO2DVSG	please contact your local sales office
Three-Year Calibration Service	R&S®CO3DVSG	please contact your local sales office
Five-Year Calibration Service	R&S®CO5DVSG	please contact your local sales office

[1] Option identification: R&S®DVSG-Bxxx = hardware option;
    R&S®DVSG-Kxxx = software option.
[2] Availability planned for September 2008.

About Rohde & Schwarz

Rohde & Schwarz is an independent group of companies specializing in electronics. It is a leading supplier of solutions in the fields of test and measurement, broadcasting, radiomonitoring and radiolocation, as well as secure communications. Established 75 years ago, Rohde & Schwarz has a global presence and a dedicated service network in over 70 countries. Company headquarters are in Munich, Germany.

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For data sheet, see
PD 5213.9892.22
and www.rohde-schwarz.com
(search term: DVSG)

*0.14 €/min within German wireline network; rates may vary in other
networks (wireline and mobile) and countries.