



Broadcasting test and measurement solutions

Product overview



Solutions for the entire transmission chain

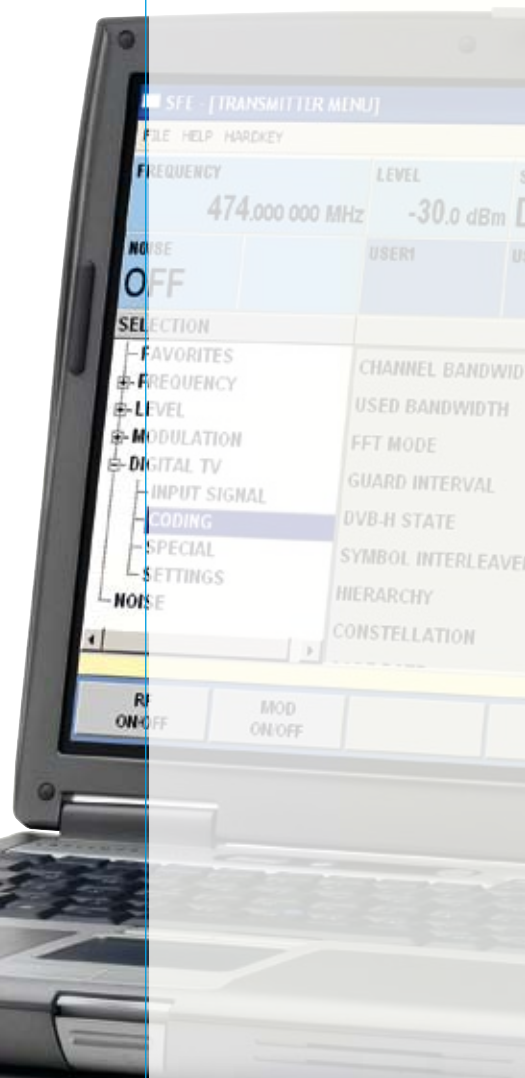
Test streams

Baseband generation

Modulation

Demodulation/analysis

Baseband analysis/decoding



Test streams

R&S® Standard Definition Library

Included in all generators

MPEG-2 Standard Definition Test Signals

- ◆ Large variety of video and audio formats

R&S® DV-DVBH¹⁾

DVB-H Stream Library

- ◆ Testing of entire DVB-H signal processing chain (signaling FEC, MPE, time slicing)

R&S® DV-H264¹⁾

H.264 Stream Library

- ◆ Testing of H.264 SDTV and HDTV signal processing

R&S® DV-HDTV

HDTV Sequences

- ◆ Testing of MPEG-2 HDTV signal processing

R&S® DV-ISDBT¹⁾

ISDB-T Stream Library

- ◆ Testing of ISDB-T signal processing

R&S® DV-TCM

Test Card M Sequences

- ◆ Testing of various DTV receiver and decoder STB functions

R&S® DV-ASC

Advanced Stream Combiner

- ◆ Simple customized TS generation
- ◆ Extensive elementary stream and data library
- ◆ DVB, ATSC, ISDB-T, and DVB-H supported

¹⁾ Not supported by the R&S® DVG.

Baseband generation

◀ Baseband generation



R&S® DVG

MPEG-2 Measurement Generator

- ◆ Small, self-contained, and easy to use
- ◆ Seamless and endless transport stream (TS) generation
- ◆ Several test streams (see section "Test streams" on the left)



R&S® DVRG

DTV Recorder Generator

- ◆ Support of MPEG-2 TS and SDI signals
- ◆ Seamless and endless TS generation
- ◆ Stream cutting function via front panel
- ◆ Several test streams (see section "Test streams" on the left)



R&S® SAF

CCVS + Component Generator

R&S® SFF

CCVS Generator

- ◆ For NTSC M and PAL B/G, PAL M/N
- ◆ Extensive pattern library and user-definable patterns
- ◆ Realtime control of amplitude, phase, and frequency parameters
- ◆ User-definable zone plate signals
- ◆ Insertion of text, data lines, hum
- ◆ Composite and component (R&S® SAF only) outputs
- ◆ SDI-601 outputs with special pattern library

R&S® SFU

Broadcast Test System with integrated transport stream MPEG-2 generator (optional)

(details on page 5)

R&S® DVM400

Monitoring, analysis, recording, and generation of MPEG-2 transport streams

(details on page 8)



R&S® SGPF

R&S® SGSF

R&S® SGMF

TV Generators

- ◆ For NTSC, PAL, and SECAM
- ◆ 30 fixed patterns
- ◆ Adjustable video amplitude

Modulation



R&S® SFU

Broadcast Test System

- ◆ High performance multistandard broadcast test system
- ◆ Unlimited number of standards
- ◆ Mobile TV: DVB-H, T-DMB, ISDB-T, MediaFLO™, DMB-TH
- ◆ Digital TV: DVB-T, ATSC/8VSB, ATSC/A-VSB, ISDB-T, DTMB, DVB-C, J.83/B, ISDB-C, DVB-S, DVB-S2, DIRECTV
- ◆ Analog TV: B/G, D/K, I, M/N, L
- ◆ Audio broadcasting: DAB, ISDB-T_{SB}, DRM (waveform library)
- ◆ Frequency range 100 kHz to 3.0 GHz
- ◆ Channel simulator for fading, interference, wideband AWGN, and impulsive noise
- ◆ Simulation of signal impairments and oscillator phase noise
- ◆ Baseband transport stream generator/player for MPEG-2 TS, ETI, and analog video and audio
- ◆ MPEG-2 TS/ETI recorder
- ◆ Libraries for SDTV, HDTV, H.264, DVB-H, T-DMB/DAB, ISDB-T, TCM, ATV Video
- ◆ Arbitrary waveform generator
- ◆ Waveform libraries for DVB-H, T-DMB/DAB, MediaFLO™, DRM, interferers
- ◆ BER measurement
- ◆ Power meter function



R&S® SFE

Broadcast Tester **NEW**

- ◆ Multistandard broadcast test signal generator
- ◆ Up to three standards in one base unit
- ◆ Mobile TV: DVB-H, T-DMB, ISDB-T, MediaFLO™, DMB-TH
- ◆ Digital TV: DVB-T, ATSC/8VSB, ATSC/A-VSB, ISDB-T, DTMB, DVB-C, J.83/B, ISDB-C, DVB-S, DVB-S2, DIRECTV
- ◆ Analog TV: B/G, D/K, I, M/N, L
- ◆ Audio broadcasting: DAB, ISDB-T_{SB}, DRM (waveform library)
- ◆ Frequency range 100 kHz to 2.5 GHz
- ◆ Wideband AWGN
- ◆ Baseband transport stream generator/player for MPEG-2 TS, ETI, and analog video and audio
- ◆ Libraries for SDTV, HDTV, H.264, DVB-H, T-DMB/DAB, ISDB-T, TCM, ATV Video
- ◆ Arbitrary waveform generator
- ◆ Waveform libraries for DVB-H, T-DMB/DAB, MediaFLO™, DRM, interferers
- ◆ BER measurement



R&S® SFE100

Test Transmitter **NEW**

- ◆ Single-standard broadcast signal generator
- ◆ Models for all major digital and analog broadcasting standards
- ◆ Mobile TV: DVB-H, T-DMB, ISDB-T, MediaFLO™, DMB-TH
- ◆ Digital TV: DVB-T, ATSC/8VSB, ATSC/A-VSB, ISDB-T, DTMB, DVB-C, J.83/B, ISDB-C, DVB-S, DVB-S2, DIRECTV
- ◆ Analog TV: B/G, D/K, I, M/N, L
- ◆ Audio broadcasting: DAB, ISDB-T_{SB}, DRM (waveform library)
- ◆ Frequency range 100 kHz to 2.5 GHz
- ◆ Integrated high-power amplifier for up to 27 dBm output level (optional)
- ◆ Baseband transport stream generator/player for MPEG-2 TS, ETI, and analog video and audio
- ◆ Libraries for SDTV, HDTV, H.264, DVB-H, T-DMB/DAB, ISDB-T, TCM, ATV Video
- ◆ Model with arbitrary waveform generator
- ◆ Waveform libraries for DVB-H, T-DMB/DAB, MediaFLO™, DRM, interferers
- ◆ 2nd RF channel in connection with R&S® SFU

Demodulation/analysis



R&S® ETL

TV Analyzer

New universal multistandard platform for mobile, digital, and analog TV

- ◆ Realtime demodulation from 500 kHz up to 3 GHz
- ◆ Combined TV signal and spectrum analyzer in one unit
- ◆ Ready for DVB-T/H, DTMB (GB 20600-2006), DVB-C (J.83/A, C), and analog TV
- ◆ High accuracy of measurements
- ◆ Tracking generator
- ◆ Preselector (optional)



R&S® FSH3-TV

TV Analyzer

- ◆ Battery operation
- ◆ Compact design
- ◆ Measurements and demodulation for analog and digital TV
- ◆ Combined video/ASI output
- ◆ CATV measurements
- ◆ Full-fledged spectrum analyzer from 100 kHz to 3 GHz
- ◆ Tracking generator and preamplifier
- ◆ Power measurement with external power sensors
- ◆ Preselector option with 75 Ω
- ◆ Optical interface to PC, software included



R&S® EFA

Multistandard TV Test Receiver/Analyzer/Demodulator

- ◆ Frequency-agile – high dynamic range
- ◆ TV test receiver with selective input
- ◆ TV demodulator with broadband input
- ◆ Realtime modulation analyzer
- ◆ SMPTE 310 and ASI transport stream outputs
- ◆ Supported standards:
 - DVB-T
 - 8VSB/ATSC
 - DVB-C
 - Analog TV
 - J.83/B, C

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R&S®ETX-T

DTV Monitoring Receiver

- ◆ Cost-effective DVB-T monitoring receiver
- ◆ High dynamic range
- ◆ Frequency scan mode
- ◆ Precise channel impulse response measurement
- ◆ Internal user administration
- ◆ Measurement and alarm report function
- ◆ HTTP and SNMP interface
- ◆ Optional realtime MPEG-2 analysis
- ◆ Optional SFN monitoring



R&S®TSM-DVB

Diversity Test Receiver for mobile DVB-T/H coverage measurements

- ◆ Mobile use – in backpack or moving vehicle
- ◆ Easy operation with R&S®ROMES software
- ◆ Simultaneous measurements with two RF paths
- ◆ Applicable for 2k, 4k, and 8k mode
- ◆ Support of all bandwidths from 5 MHz to 8 MHz
- ◆ Two special outputs for external ASI decoder
- ◆ Diversity, dual, hierarchical, and redundant mode
- ◆ Compact, lightweight (1.8 kg), 12W, 12V DC

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Baseband analysis/decoding

R&S® DVM Family

Monitoring, analysis, generation, and recording/replaying of MPEG-2 transport streams; demodulation and analysis of RF signals

- ◆ Support of MPEG-2, MPEG-4, H.264, AVC, SDTV, and HDTV
- ◆ ASI, SPI, and SMPTE 310M interfaces
- ◆ RF interfaces for DVB-T/H/C/S/S2, ATSC/8VSB, and J.83/B **NEW**
- ◆ IP interface (R&S® DVM400) **NEW**
- ◆ Hardware decoder with DVI/HDMI interface for SDTV and HDTV, MPEG-2, or H.264 coded **NEW**



R&S® DVM 50

The starter package

Particularly economical solution for all monitoring and analysis tasks, whether in the lab, in service, or unattended in the field

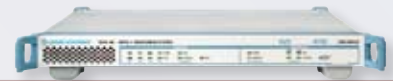
- ◆ Simultaneous realtime monitoring of up to four signals (RF and TS characteristics)
- ◆ Easy expandability to full-fledged analyzer by means of software options
- ◆ Operation via external PC



R&S® DVM 400

Universal and portable

- ◆ Broadest scope of functions – ideal for development
- ◆ Configurable functionality: analyzer, hardware decoder, recorder, generator, RF inputs, or IP inputs
- ◆ Several test streams (see section “Test streams” on page 3)
- ◆ Simultaneous operation of monitoring, analysis, and recorder/generator functions
- ◆ Integrated display screen
- ◆ Small and lightweight, making it ideal for portable use



R&S® DVM100/100 L

Space-saving

- ◆ Ideal for network operators and program providers
- ◆ Simultaneous realtime monitoring of up to two RF signals and four TS (up to 20 signals – RF and transport streams – in one system when expanded with the R&S® DVM120)
- ◆ Easy expandability to full-fledged analyzer by means of software options



R&S® DVM 120

A complementary choice

- ◆ Expansion to the R&S® DVM100/100L and R&S® DVM400
- ◆ Simultaneous monitoring of up to four signals (RF and TS characteristics) or eight TS



R&S® DVQ

Digital Video Quality Analyzer

- ◆ Realtime monitoring with or without reference
- ◆ Flexible scan function for all or selected programs of one TS
- ◆ Integrated MPEG-2 standard definition hardware decoder
- ◆ ASI/SPI/SMPTE 310 and SDI interfaces
- ◆ Simple remote control and system integration via SNMP
- ◆ Detailed MPEG-2 elementary stream analysis (R&S® DVQ-B1)



R&S® DVQM

Multichannel Digital Video Quality Analyzer

- ◆ Realtime monitoring with or without reference
- ◆ Flexible scan function for all or selected programs of one TS
- ◆ Monitoring of up to 12 programs in parallel
- ◆ Integrated MPEG-2 standard definition hardware decoder
- ◆ ASI/SPI/SMPTE 310 and SDI interfaces
- ◆ Simple remote control and system integration via SNMP
- ◆ Detailed MPEG-2 elementary stream analysis (R&S® DVQ-B1)



R&S® UAF

Video Analyzer

- ◆ For NTSC or PAL
- ◆ Fast measurement of 25 video parameters
- ◆ Ideal for video monitoring



R&S® VSA

Video Measurement System

- ◆ For PAL, SECAM, and NTSC
- ◆ Fast video parameter measurements – dozens of measurements in just seconds
- ◆ Three-channel video oscilloscope
- ◆ Vectorscope
- ◆ Wide video bandwidth: 9 MHz



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