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Test & Measurement

- sales
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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.

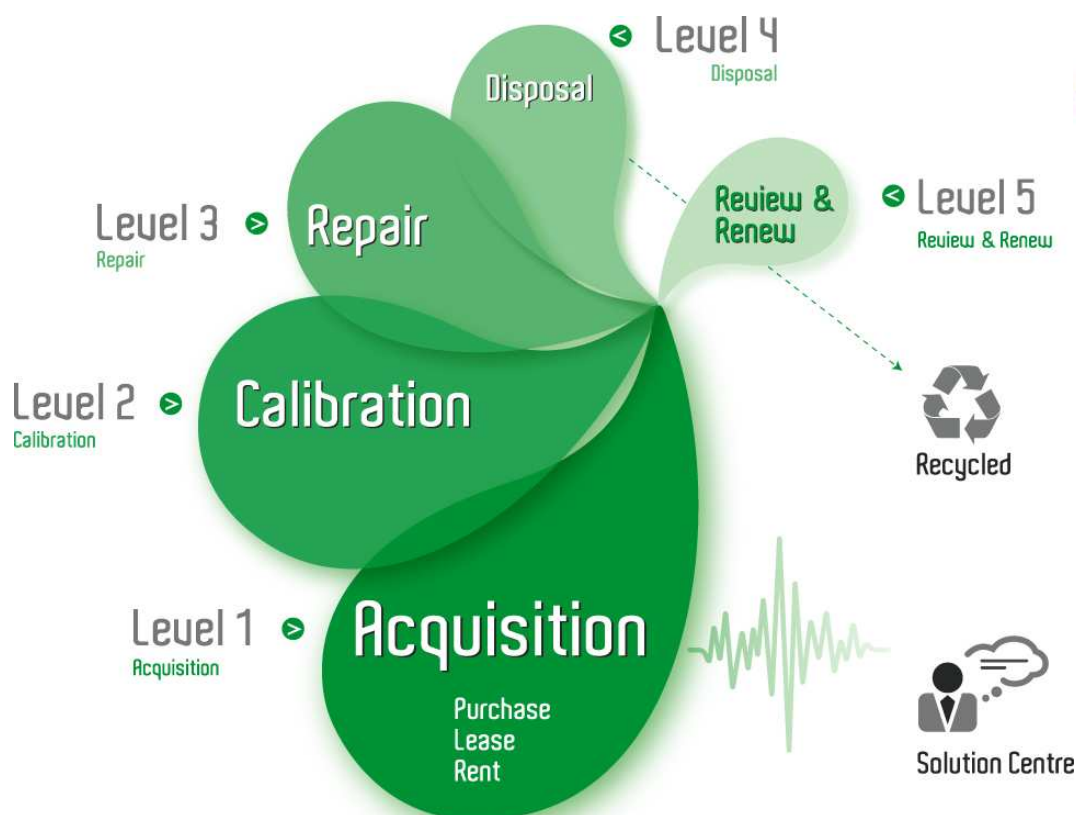
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Version
01.00

April
2004

Audio Analyzer R&S®UPV

Compact instrument for all audio measurements

- ◆ Suitable for all interfaces: analog, digital and combined
- ◆ True dual-channel signal processing and generation
- ◆ Recording and replaying of audio signals
- ◆ Maximum dynamic range
- ◆ Sampling rate up to 192 kHz
- ◆ Gapless FFT analysis
- ◆ User-programmable filters for analyzers and generators
- ◆ Jitter analysis and interface tester
- ◆ Compact instrument with integrated PC
- ◆ Extensive online help
- ◆ Slots for future options



ROHDE & SCHWARZ

Audio analysis – today and tomorrow

Analog and digital

Although audio signals are mainly processed digitally nowadays, analog technology will remain a viable alternative that is continuously being enhanced. As a result, it must be possible to carry out measurements on both analog and digital interfaces, which is where the Audio Analyzer R&S®UPV comes in.

The instrument performs nearly all measurements that occur in the audio world, ranging from frequency response measurements through distortion and spectral display to the analysis of digital interfaces. Several measurement functions can be performed and displayed simultaneously; in contrast to numerous other audio analyzers, all measurements in the audio frequency range are performed as true dual-channel measurements, cutting the measurement time for stereo applications by half.

The generator is just as versatile, creating any conceivable signal from sinewave to noise; these signals can also be output with a user-selectable nominal frequency response.

Wide scope of test signals

The generators of the R&S®UPV create a wide variety of analog and also digital (option R&S®UPV-B2) test signals:

- ◆ Sinewave signals
- ◆ Intermodulation signals
- ◆ Burst signals
- ◆ Noise
- ◆ DC voltage
- ◆ Dual-channel sinewave signals

Diverse measurement functions

The R&S®UPV provides extensive measurement functions on analog and digital (option R&S®UPV-B2) interfaces:

- ◆ Level measurement
- ◆ Selective level measurement
- ◆ SINAD or THD+N measurement
- ◆ Distortion measurement (THD)
- ◆ Modulation factor and DFD
- ◆ DC voltage measurement
- ◆ Frequency, phase and group delay measurement
- ◆ Waveform function
- ◆ FFT analysis

All inclusive

The R&S®UPV is an all-in-one instrument with an integrated control PC, making it easy to transport. Since the instrument comes factory-ready, it merely needs to be unpacked and switched on before

it can be placed into service. Peripherals are not required, since all essential equipment is included:

- ◆ Hard disk
- ◆ CD/DVD combo drive
- ◆ LAN interface
- ◆ Four USB connectors
- ◆ Connectors for keyboard, mouse, monitor and printer

Flexible operation

The R&S®UPV (Windows XP Embedded operating system) is equipped with a modern and intuitive user interface.

The large screen plays a key role, not only for displaying measurement results. All settings are made in panels that contain all functions and settings that are used together.

Five different screen settings are available. Switching between these screens is possible at a keystroke, permitting fast access to the individual panels without jamming the screen display.

The size of the panels and their position on the screen can be changed at any time.

The default settings of the instrument, such as audio interface configuration, are located in separate panels; once the settings are made, they can be hidden for the remaining measurement.

To make the user's task easier, only function blocks that are currently required are displayed; all other function blocks remain in the background. For example, sweep parameters are displayed in the generator panel only after the sweep function has been selected.

Highlights

Analog

Dual-channel analyzer
Generation of sinewave signals

FFT noise floor
Inherent frequency response (20 Hz to 20 kHz)

up to 250 kHz bandwidth
up to 200 kHz, single-channel (R&S®UPV-B1)
up to 80 kHz, dual-channel
<-140 dB
±0.01 dB

Digital

AES/EBU interface
Dynamic range

up to 192 kHz sampling rate
>170 dB

Functions

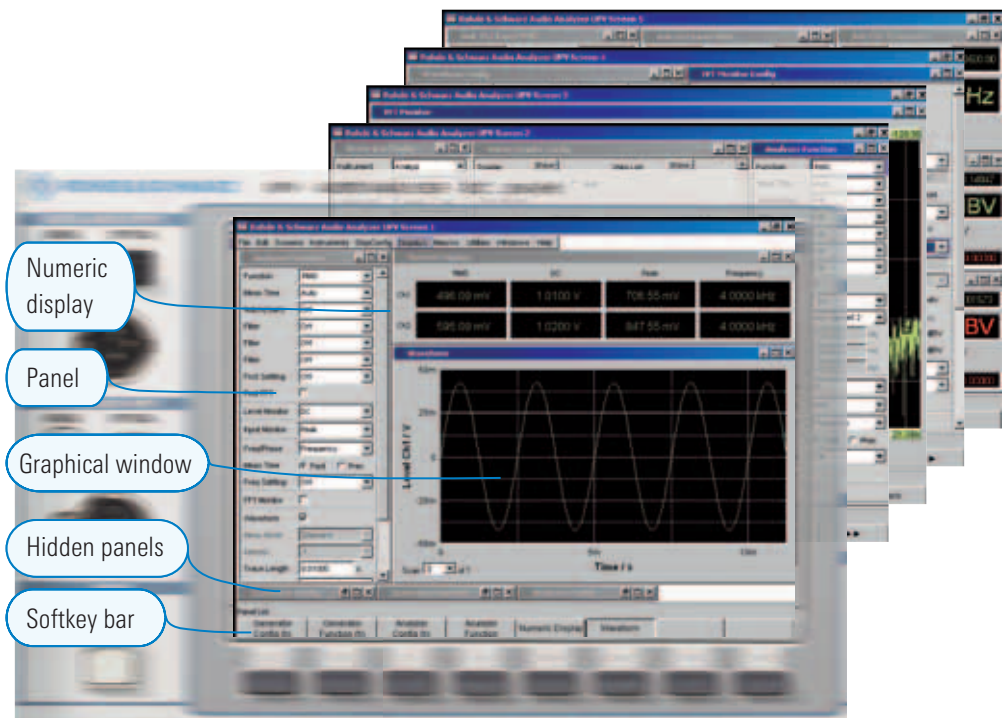
Dual-channel signal generation
Dual-channel analysis
Analog and digital measurements
FFT analysis up to 256k points

The entire instrument can be operated via the front panel, where the rotary knob plays a pivotal role. By using only one hand, users can navigate within the panels. A function can be selected by pressing the rotary knob. Numeric values can be varied directly by using the rotary knob, which is of enormous advantage when making adjustments.

Softkeys at the bottom of the screen permit fast access to changing functions, e.g. with graphical display.

As with Windows applications, the R&S®UPV can also be operated via an external keyboard and/or mouse.

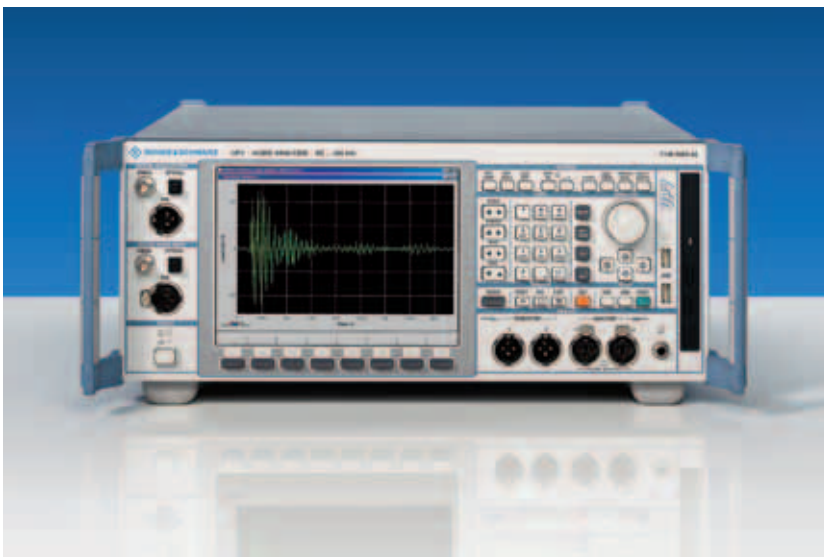
Since the operating philosophy is easy to understand and since analog and digital measurements are performed in a similar manner, users can quickly master instrument operation.



The large screen provides a straightforward display of all important settings and states of the audio analyzer. Five displays (screens) are available for better arrangement of the large number of possible panels and display windows.

All measurement results at a glance

- ◆ Realtime display of measurement results for one or both channels and multiple measurement functions
- ◆ Scalable graphical windows that can be moved on the screen
- ◆ Multiple measurement diagrams simultaneously available (e.g. analyses in the frequency and time domains can be displayed simultaneously)
- ◆ Read-out of graphics with vertical and horizontal cursors as well as superposition and comparison with limit lines or stored measurement results



Options for expanded applications

Low Distortion Generator R&S®UPV-B1	For all applications that require extremely pure analog signals or an extended frequency range up to 200 kHz.
Digital Audio I/O 192 kHz R&S®UPV-B2	This option contains the digital audio interfaces (balanced, unbalanced and optical) for the standard sampling rates of 32 kHz to 192 kHz. It can be complemented by the following options: – Digital Audio Protocol R&S®UPV-K21 (soon available) for analyzing and generating digital auxiliary data (channel status, user, validity, parity) – Jitter and Interface Test R&S®UPV-K22 (soon available) for analyzing the physical parameters of the digital audio interface
Second Analog Generator R&S®UPV-B3	With this second analog output amplifier, different signals can also be output on both analog output channels.
I²S Interface R&S®UPV-B41 (soon available)	This second digital interface option can be installed in addition to the R&S®UPV-B2, permitting audio analysis on I²S chips.
Remote Control R&S®UPV-K4	This option ensures remote control operation either via a LAN or an RS-232-C or IEC/IEEE bus interface in accordance with IEC 625/IEEE488.
150 Ω Modification R&S®UPV-U1	This option changes the source impedance of the analog generator from 200 Ω to 150 Ω.

Ordering information

Designation	Type	Order No.
Audio Analyzer	R&S®UPV	1146.2003.02
Low Distortion Generator	R&S®UPV-B1	1146.5202.02
Digital Audio I/O 192 kHz	R&S®UPV-B2	1146.4306.02
Second Analog Generator	R&S®UPV-B3	1146.4806.02
I²S Interface	R&S®UPV-B41	1146.5402.02
Digital Audio Protocol	R&S®UPV-K21	1401.7809.02
Jitter and Interface Test	R&S®UPV-K22	1401.7909.02
Remote Control	R&S®UPV-K4	1401.9001.02
150 Ω Modification	R&S®UPV-U1	1146.1507.02
XLR/BNC Adapter Set	R&S®UPL-Z1	1078.3704.02
19" Rack Adapter	R&S®ZZA-411	1096.3283.00

More information at
www.rohde-schwarz.com
 (search term: UPV)



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