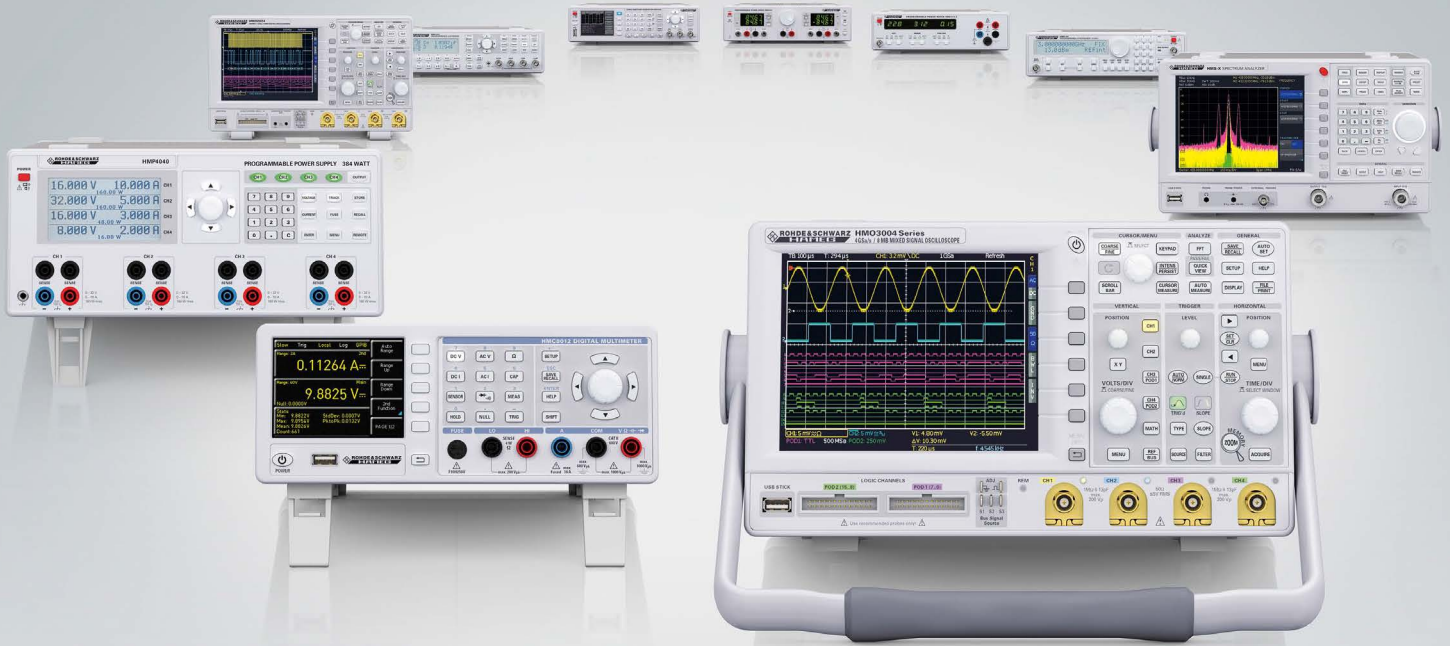
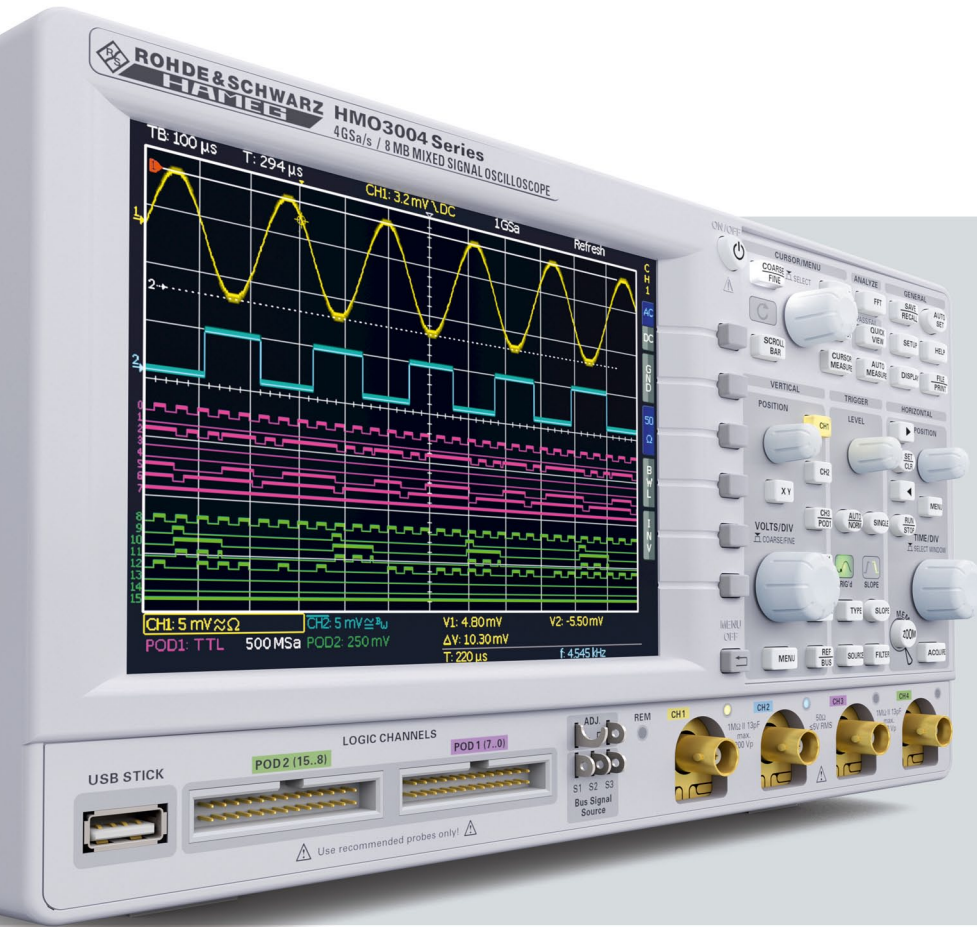


Product Overview

HAMEG[®]
Instruments
A Rohde & Schwarz Company



HMO Mixed Signal Oscilloscopes



HMO3000 Series

Key facts

- 300 MHz to 500 MHz bandwidth
- 4 GSa/s real time, low noise flash A/D converter
- 8 MPts memory, Zoom up to 200,000:1
- MSO functionality included as standard (HO3508/HO3516 logic probe with 8/16 channels required)
- Automatically or manually adjustable memory depth
- Segmented memory option (HOO14)



All HMO oscilloscopes, *1) HMO300x, HMO202x, HMO152x only



HMO3000 upgrade options	
Segmented memory	Type
Divide memory in up to 1.000 segments, acquisition rate up to 200.000 Wfm/s	HOO14
Bandwidth upgrade to 500 MHz	
For 300 MHz 2-Channel HMO3032	HOO352
For 300 MHz 4-Channel HMO3034	HOO354
For 400 MHz 2-Channel HMO3042	HOO452
For 400 MHz 4-Channel HMO3044	HOO454

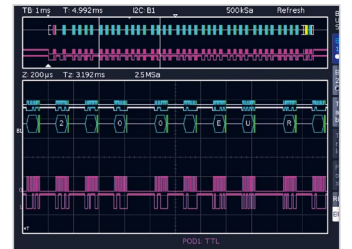
All options can easily be upgraded at any later point in time with option upgrade vouchers available at your dealer. For detailed information please see page 14.

Options for all HMO series oscilloscopes

Serial bus analysis HOO10 HOO11 HOO12	
Designation	Type
Analysis of I ² C, SPI and UART/RS-232 signals on analog and logic channels. Two buses can be analyzed at the same time	HOO10
Analysis of I ² C, SPI and UART/RS-232 signals on all analog channels. Only one bus available for analysis	HOO11
Analysis of CAN and LIN signals on analog and logic channels for two buses	HOO12



HEX decoded CAN bus signal



Trigger to START condition of I²C data package

- Hardware accelerated triggering and decoding in real-time
- Display data in ASCII, binary, decimal or hexadecimal format
- Powerful trigger to isolate specific data packages
- Detailed Zoom also available for serial bus analysis

- Color-coded display of decoded bus signals
- Directly export analyzed data to USB flash drive
- Add serial bus options to all HMO oscilloscopes with software licence keys at any time

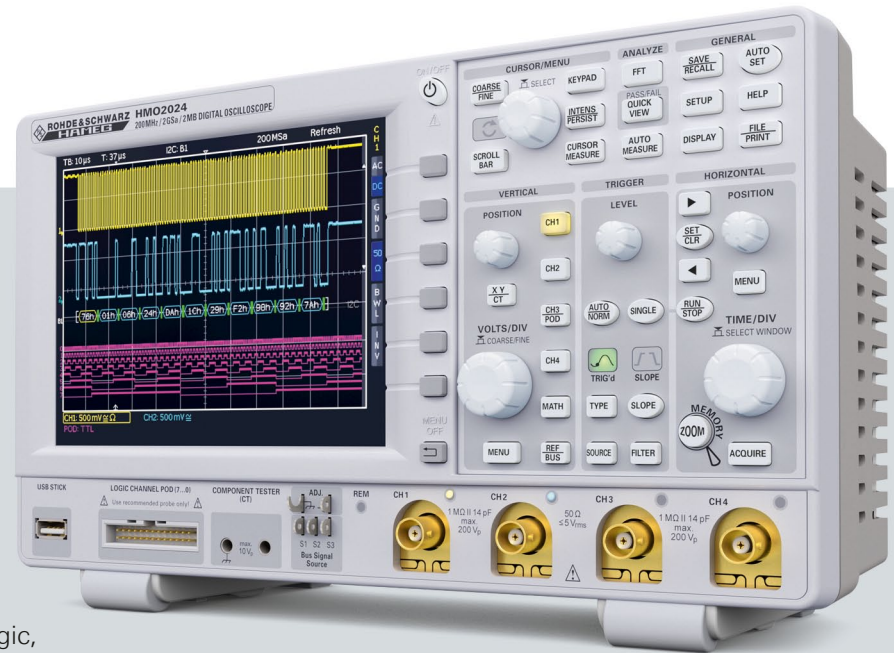
HMO Compact Series

Key facts

- 70 MHz to 200 MHz bandwidth
- 2 GSa/s real time, low noise flash A/D converter
- 2 MPts memory, Zoom up to 50,000:1
- MSO functionality included as standard (HO3508 logic probe with 8 channels required)

All HMO oscilloscopes features

- Vertical sensitivity up to 1 mV/div.
- Trigger modes: slope (A/B), pulse width, video, logic, serial buses (optional), hold-off*
- Serial bus trigger and hardware accelerated decode incl. list view. Options: I²C + SPI + UART/RS-232 (H0010/H0011), CAN + LIN (H0012)
- 28 auto-measurement parameters plus statistics, formula editor, ratio cursor



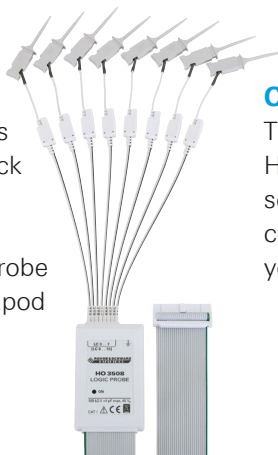
- 6-digit hardware counter
- FFT up to 64kPts (dBm, dBV, V_{rms})
- Pass/fail test based on masks
- Automatic search for user-defined events
- Display: 12 div. x-Axis, 20 div. y-Axis (Virtual Screen)

*HMO3000 models only

HMO series at a glance	HMO3000 series			HMO compact series			
Bandwidth	500 MHz	400 MHz	300 MHz	200 MHz	150 MHz	100 MHz	70 MHz
Model: 4 channel	HMO3054	HMO3044	HMO3034	HMO2024	HMO1524	HMO1024	HMO724
2 channel	HMO3052	HMO3042	HMO3032	HMO2022	HMO1522	HMO1022	HMO722
Sampling rate (per analog channel)	2 GSa/s			1 GSa/s			
Maximum sampling rate	4 GSa/s			2 GSa/s			
Memory depth per channel	4 MPts.			1 MPts.			
Maximum memory	8 MPts.			2 MPts.			
Max number of logic channels	16			8			
Input impedance	1 MΩ / 50 Ω			1 MΩ / 50 Ω		1 MΩ	
V/div. @ 1 MΩ	1 mV/div. to 5 V/div.			1 mV/div. to 10 V/div.			
V/div. @ 50 Ω	1 mV/div. to 5 V/div.			1 mV/div. to 10 V/div.		n/a	
DC-offset	± 0.2V to ± 50V			± 0.2V to ± 100V		-	
Component tester	-			■			
Probes included (Amount = number of channels)	HZ355	HZ350	HZ350	HZO10	HZO10	HZ154	HZ154

Logic probe HO3508 | HO3516

- Logic probe HO3508 fits to all HMO series oscilloscopes (also available as double pack HO3516)
- No hardware lock to a specific device
- 8 logic channels available on each logic probe
- Signal threshold adjustable for each logic pod

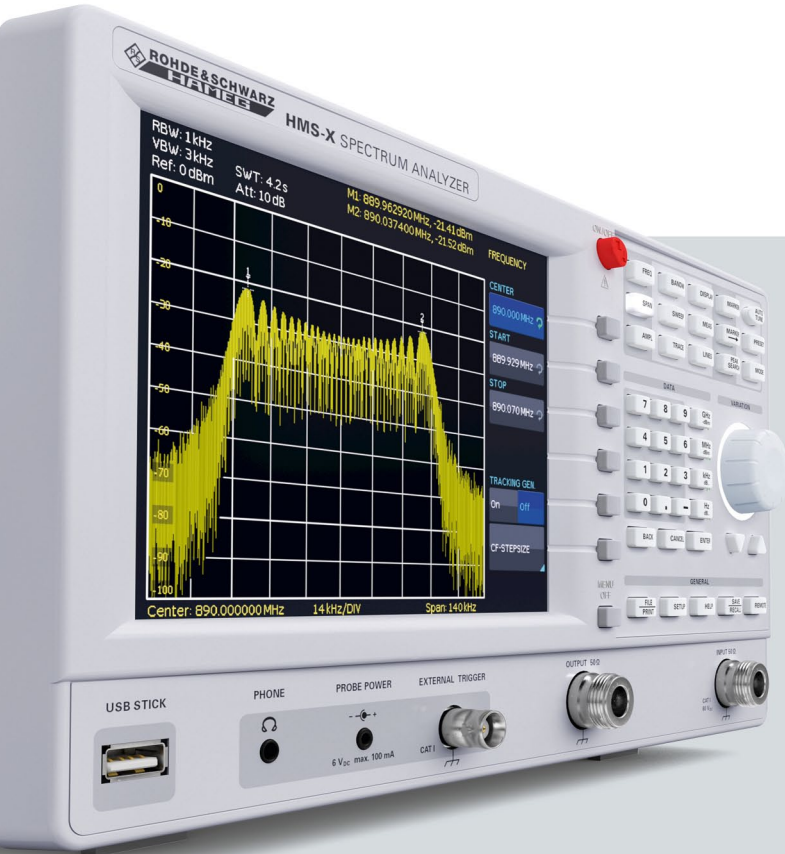


Carrying case HZO90 | HZ99

The HZO90 (HMO3000 series, HMS series) or HZ99 (HMO compact series) carrying case allows you to conveniently and safely transport your instrument.



HMS-X Spectrum Analyzer



1 Basic Unit + 3 Options =
Your HMS Spectrum Analyzer

Key facts

- Frequency range: 100 kHz to 1.6 GHz/3 GHz^{*1}
- Spectral purity greater than -100 dBc/Hz (at 100 kHz)
- SWEEP from 20 ms to 1000 s
- Detectors: auto-, min-/max.-peak, sample, RMS, average, quasi-peak^{*2}
- Miscellaneous marker/ Δ marker and peak functions
- Tracking generator^{*3}
 - Frequency range: 5 MHz to 1.6 GHz/3 GHz^{*1}
 - Output level: -20 dBm to 0 dBm
- Directly export data to USB flash drive, RS-232/USB dual interface for remote control
- Fanless design and fast boot time

^{*1} with HMS-3G (HV212) option

^{*2} with HMS-EMC (HV213) option

^{*3} with HMS-TG (HV211) option



One HMS-X basic unit and three options allow you to configure an instrument that best fits your needs

HMS-TG This option activates the tracking generator in the instrument.

HMS-3G The frequency range is increased from 1.6 GHz to 3 GHz with this option.

HMS-EMC This option activates all the functions that are required for EMC precompliance measurements. The preamplifier option has been integrated into the new HMS EMC option.

HMS-X options	Option code ^{*4}	Voucher code ^{*5}
Unlock built-in tracking generator	HMS-TG	HV211
Bandwidth upgrade to 3 GHz	HMS-3G	HV212
EMC option incl. preamplifier	HMS-EMC	HV213

^{*4} available only with purchase of HMS-X basic unit

^{*5} activate HMS-X options at any time after purchase of HMS-X basic unit

You can easily upgrade all three available options at any later point in time with option upgrade vouchers available at your dealer. The voucher number and the serial number of your HMS-X instrument enable you to generate the respective licence key directly on a dedicated web page.

In response to customer feedback, the preamplifier function, which was previously available separately with the HMS-X, has become an integral part of the HMS-EMC option (HV213 as voucher). It is therefore no longer necessary to purchase this separately.

HMS-X series model overview	HMS-X with EMC option	HMS-X basic unit
Amplitude measurement range	-114 dBm to +20 dBm	-104 dBm to +20 dBm
DANL	typ. -135 dBm	typ. -104 dBm
Resolution bandwidth	100 Hz to 1 MHz, 200 kHz (-3 dB), 200 Hz, 9 kHz, 120 kHz, 1 MHz (-6 dB)	10 kHz to 1 MHz, 200 kHz (-3 dB)
Video bandwidth	10 Hz to 1 MHz	1 kHz to 1 MHz

VSWR bridge 3 GHz HZ547

This unit is used to measure the voltage standing wave ratio (VSWR) and reflection coefficient of a device under test with an impedance of 50 Ω.



- ▮ Option HMS-TG required
- ▮ Option HMS-3G recommended

Frequency range:	100 kHz to 3 GHz
Impedance:	50 Ω
Directivity:	>28 dB (100 kHz to 300 kHz) >35 dB (300 kHz to 1 GHz) >30 dB (1 GHz to 3 GHz)
Reflection loss at DUT port:	>20 dB
Insertion loss	
IN ▷ OUT:	20 dB (100 kHz to 300 kHz)
IN ▷ OUT:	18 dB (300 kHz to 3 GHz)
IN ▷ DUT:	1.7 dB
DUT ▷ OUT:	16 dB
Max. Power Dissipation:	+26 dBm
Connectors:	N (female)
Accessories supplied:	HZ525 (termination 50 Ω 1 W), N male to N male (2 pcs.), carrying case

Near-field probe set 3 GHz HZ540 | HZ550

Near-field probe set for comparative measurements with built-in preamplifier covering frequency ranges from 1 MHz to 3 GHz, designed for the 50 Ω N-connectors of the HMS-X:

- ▮ E-field probe
- ▮ H-field probe
- ▮ High impedance probe
- ▮ μH-field probe (HZ550)
- ▮ Radiation probe (HZ550)



Alternative version HZ540L | HZ550L

Same specification as HZ540 | HZ550, but with low capacitance probe instead of high impedance probe

Near-field probe set 1 GHz HZ530

Three active broadband probes, designed for 50 Ω inputs of HMS-X, powered either by the analyzer or by batteries:

- ▮ E-field probe
- ▮ H-field probe
- ▮ High impedance probe



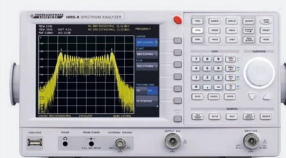
Two-line V-network (LISN) HM6050-2

- ▮ Single-phase V-network to measure line-conducted interferences from 9 kHz to 30 MHz (based on CISPR 16)
- ▮ 115V and 230V versions available
- ▮ Selectable transient limiter
- ▮ Artificial hand connector
- ▮ RS-232 interface for remote control



EMC precompliance set 1 GHz EMC-SET1

The EMC precompliance set EMC-SET1 includes all necessary instruments to analyse typical EMC problems. This set contains a spectrum analyzer HMS-X incl. HMS-EMC option, a probe set HZ530, the HM6050-2 LISN for line conducted measurements and the HME Explorer software for EMC precompliance measurements.



HMS-X incl. HMS-EMC option

+



HZ530 1GHz

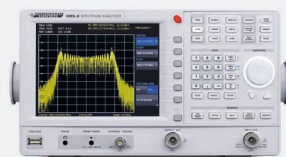
+



HM6050-2

EMC precompliance set 3 GHz EMC-SET2

The EMC precompliance set EMC-SET2 includes all necessary instruments to analyse typical EMC problems. This set contains a spectrum analyzer HMS-X incl. HMS-EMC and HMS-3G option, a probe set HZ540, the HM6050-2 LISN for line conducted measurements and the HME Explorer software for EMC precompliance measurements.



HMS-X incl. HMS-EMC and HMS-3G option

+



HZ540 3GHz

+



HM6050-2

HMP Power Supplies



Programmable 3 or 4-Channel High-Performance Power Supplies HMP4030 | HMP4040

Key facts

- Low residual ripple due to linear post-regulators
- Real-time voltage, current and watt values
- High setting and read-back resolution: 1 mV and 0.1/0.2/1.0 mA (current output and model dependent)
- FuseLink (electronic fuse) freely combinable for all channels
- FuseDelay tuneable up to 250 ms
- EasyArb function directly programmable at the device to easily generate user-defined waveforms
- PC software (free of charge)
- Independently adjustable over-voltage protection (OVP) for each channel
- Advanced parallel- and serial operation through V/I tracking
- Front connectors: 4 mm safety sockets
- Rear connectors for all channels including SENSE
- RS-232/USB dual interface, remote control via SCPI based commands

HMP series model overview	HMP4040	HMP4030	HMP2030	HMP2020
Output voltage per channel	0V to 32V			
Output current per channel	0A to 10A		0A to 5A	1 x 0A to 10A 1 x 0A to 5A
Maximum output power per channel	160W		80W	1 x 160W 1 x 80W
Total output power	384W		188W	
Channels	4	3	3	2

Industrial production environment

Power supply units in industrial production environment are often found in 19" racks. The HMP series instruments are very suitable for this use as all models can be integrated into 19" racks with the rack mounting kits HZ42 (for HMP20x0 instruments) and HZP91 (for HMP40x0 instruments). Additionally, all front panel connectors, including SENSE

lines, are also located at the back panel of the instrument. And last but not least, the existing USB and serial connector card (HO720) in all HMP models can alternatively be replaced by an Ethernet/USB (HO730) or GPIB card (HO740) for remote control capability purposes.



19" rackmount kit HMP91



Rear connectors for all channels including SENSE

Programmable 2 or 3-Channel High-Performance Power Supplies HMP2020 | HMP2030



HMP2020 with one 160W channel



3-Channel Arbitrary Power Supply HM8143



Key facts

- 2 x 0V to 30V/0A to 2A | 1 x 5V/2A | (130W)
- Linear regulated, two-quadrant power supply (current source and sink)
- Real-time voltage and current values
- Setting and read-back resolution: 10mV/1mA
- Advanced parallel- and serial operation
- Front connectors: 4mm safety sockets
- SENSE connectors for line loss compensation (30V channels)
- External modulation of output voltages up to 50kHz
- Arbitrary module: 4096 points, 12 bit
- PC software (free of charge) to easily create user-defined waveforms
- RS-232/USB dual interface, IEEE-488 (GPIB) optional

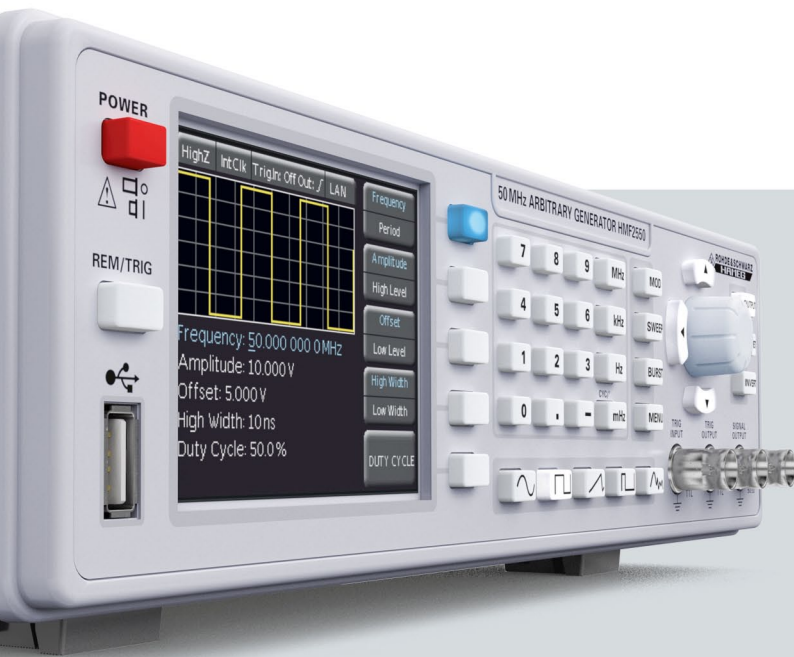
3-Channel Power Supply HM7042-5



Key facts

- 2 x 0V to 32V/0A to 2A | 1 x 0V to 5.5V/0A to 5A | (155W)
- Low residual ripple due to linear post-regulators
- Real-time voltage and current values
- Setting and read-back resolution: 10mV/1mA
- Advanced parallel- and serial operation
- Adjustable over-voltage protection (OVP)
- Front connectors: 4mm safety sockets
- Temperature-controlled fan management

HMF Arbitrary Function Generator



25 MHz | 50 MHz Arbitrary Function Generator HMF2525 | HMF2550

Key facts

- Frequency range: 10 μ Hz to 25 MHz/50 MHz
- Triangle waveforms up to 10 MHz
- Output voltage: 5 mV_{pp} to 10 V_{pp} (at 50 Ω)
- Waveform modes: sine, square, triangle/ramp, pulse and arbitrary waveforms (incl. predefined waveforms as white/pink noise, cardinal sine, exponential rise/fall, et al.)
- Modulation modes: AM, FM, pulse, PWM, FSK (internal and external)
- Arbitrary waveform generator: 250 MSa/s, 14 bit, 256 kPts
- PC software (free of charge) to easily create user-defined waveforms
- Oscillographic signal display in real-time
- Front USB connector to easily save and recall waveforms and settings
- RS-232/USB dual interface for remote control
- Fanless design



HMC Compact Series

5³/₄-Digit Digital Multimeter HMC8012 | HMC8012-G



Key facts

- Measurement range: DC to 100 kHz
- Resolution: 1 μ V, 100 nA, 1 m Ω , 1 pF, 1 Hz, 0.1 $^{\circ}$ C/F
- Basic accuracy: 0.015% (DC)
- True RMS measurement, AC and AC+DC
- Simultaneous display of three measurement functions, e.g. DC + AC + statistics
- Measurement rate: up to 200 values per second
- Measurement functions: V_{DC}, I_{DC}, RMS, V_{AC}, I_{AC}, frequency, DC power, resistance (2- and 4-wire), temperature, capacitance, diode and continuity test
- Mathematic functions: limit testing, Min/Max, average, offset, DC power, dB, dBm
- Data logging to internal memory or USB flash drive in .csv-format
- Interfaces: USB-TMC/VCP, Ethernet, LXI, IEEE-488 (GPIB)*
- SCPI commands widely compatible with Agilent 34410A



LCR Bridge

LCR Bridge HM8118

Key facts

- Measurement range: 20 Hz to 200 kHz (69 steps)
- Basic accuracy: 0.05 %
- Measurement rate: up to 12 values per second
- Automatic or manual selection of circuit type (serial, parallel)
- Measurement functions:
L, C, R, |Z|, X, |Y|, G, B, D, Q, Θ , Δ , M, N
- Transformer measurement: mutual inductance and ratio
- Tunable DC BIAS (voltage/current):
internal: 0 V to 5 V / 0 mA to 200 mA (resolution: 10 mV / 1 mA)
external: 0 V to 40 V (voltage BIAS only)
- RS-232/USB dual interface for remote control
- Fanless design



19" rackmount kit HZ42

Due to its remote control capability the HM8118 is regularly used in industrial production environments.



HZ184 + HZ188 included

The HM8118 includes a 4-wire SMD component test fixture (HZ188) as well as a 4-wire Kelvin test cable (HZ184).



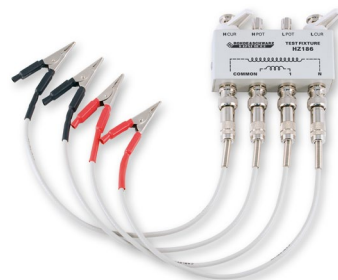
4-wire test fixture incl. shorting plate HZ181

This optional 4-wire test fixture is for evaluation of your leaded components, incl. shorting plate.



4-wire transformer test cable HZ186

The HZ186 is an optional 4-wire transformer test cable to measure the mutual inductance and ratio.



System Devices



RF-Synthesizer 3 GHz HM8135 | HM8135-X

Key facts

- Frequency range: 1 Hz to 3 GHz
- High dynamic output power: -135 dBm to +13 dBm
- Frequency resolution: 1 Hz
- High spectral purity, excellent SWEEP mode
- Modulation modes: AM, FM, pulse, phase, FSK, PSK
- Internal modulation (10 Hz to 200 kHz): sine, square, triangle, ramp
- External Ref.-Input/Output (10 MHz) via BNC-connector
- HM8135:** TCXO (temperature stability: $\pm 0.5 \times 10^{-6}$)
- HM8135-X:** OCXO (temperature stability: $\pm 1.0 \times 10^{-8}$)
- RS-232/USB dual interface, IEEE-488 (GPIB) optional



RF-Synthesizer 1.2 GHz HM8134-3 | HM8134-3X



Key facts

- Frequency range: 1 Hz to 1.2 GHz
- High dynamic output power: -127 dBm to +13 dBm
- Frequency resolution: 1 Hz
- High spectral purity, excellent SWEEP mode
- Modulation modes: AM, FM, pulse, phase, FSK, PSK
- Internal modulation (10 Hz to 150 kHz): sine, square, triangle, ramp
- External Ref.-Input/Output (10 MHz) via BNC-connector
- HM8134-3:** TCXO (temperature stability: $\pm 0.5 \times 10^{-6}$)
- HM8134-3X:** OCXO (temperature stability: $\pm 1.0 \times 10^{-8}$)
- RS-232/USB dual interface, IEEE-488 (GPIB) optional

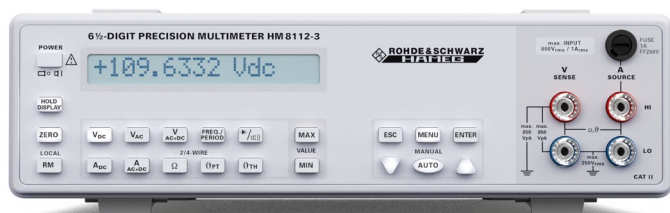
Programmable Counter 3 GHz HM8123 | HM8123-X



Key facts

- Measurement range: DC to 3 GHz
- Input A/B (BNC): DC to 200 MHz
- Input C (SMA): 100 MHz to 3 GHz
- Input impedance A/B: 50 Ω or 1 M Ω (switchable), sensitivity 25 mV
- Input impedance C: 50 Ω , sensitivity 30 mV
- 10-digit resolution (at 10 s gate time)
- 9 measurement functions, external GATE and ARMING connectors (BNC)
- External Ref.-Input (10 MHz) via BNC-connector
- HM8123:** TCXO (temperature stability: $\pm 0.5 \times 10^{-6}$)
- HM8123-X:** OCXO (temperature stability: $\pm 1 \times 10^{-8}$)

6 1/2-Digit Precision Multimeter HM8112-3 | HM8112-3S



Key facts

- Measurement range: DC to 300 kHz
- Resolution: 100 nV, 100 pA, 100 $\mu\Omega$, 0.01°C/F
- High accuracy: 0.003% (DC), 0.08% (AC)
- True RMS measurement, AC and AC+DC
- Measurement functions: voltage, current, resistance and temperature measurement, frequency and diode test (2- and 4-wire)
- Measurement intervals from 0.1 s to 60 s
- Internal data logger for long-term acquisition
- RS-232/USB dual interface, IEEE-488 (GPIB) optional
- HM8112-3S:** HM8112-3 with scanner card

Arbitrary Function Generator 12.5 MHz HM8150



Key facts

- Frequency range: 10 mHz to 12.5 MHz
- Triangle waveforms up to 250 kHz
- Output voltage: 10 mV_{pp} to 10 V_{pp} (at 50 Ω)
- Waveform modes: sine, square, triangle/ramp, pulse and arbitrary waveforms
- External amplitude modulation up to 20 kHz
- External connectors: GATE (I), TRIGGER (I/O), SWEEP (O), MODULATION (I)
- Arbitrary waveform generator: 40 MSa/s, 12 bit, 4096 Pts
- PC software (free of charge) to easily create user-defined waveforms
- RS-232/USB dual interface, IEEE-488 (GPIB) optional

Power Consumption Meter 8 kW HM8115-2

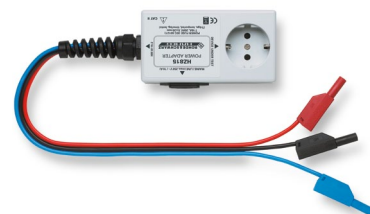


Key facts

- Measurement range: 1 mW to 8 kW
- Voltages from 100 mV to 500 V, currents from 1 mA to 16 A
- Frequency range: DC to 1 kHz
- Simultaneous display of voltage, current and power (W, var, VA or power factor) values
- Auto-ranging for easy measurement
- Suitable for measurements on frequency converters
- MONITOR (BNC) shows instantaneous power value
- RS-232/USB dual interface, IEEE-488 (GPIB) optional
- PC software (free of charge) for automated long-term data acquisition included

Power adapter HZ815

Adapter (10A fused) for easy measurement of mains voltage, current and power consumption to use with HM8115-2



Modular System Series 8000

Mainframe HM8001-2



Key facts

- Basic unit for modules of the modular system series 8000
- Power supply for 2 modules
- DC voltages electronically regulated, floating and short-circuit proof
- Power transformer with thermal fuse
- Up to 5 mainframes can be stacked

4 BNC connectors option H0801

4 BNC connectors on the rear panel of the HM8001-2 allow signal transmission to or from HM8021-4 and HM8030-6 modules



4 3/4-Digit Programmable Multimeter HM8012



Key facts

- 4 3/4-digit display with 50,000 counts
- Basic accuracy 0.05%
- Max. resolution: 10 μV, 0.01 dBm, 10 nA, 10 mΩ, 0.1 °C
- Offset function/relative value measurement

LCR Meter HM8018



Key facts

- Measurement functions: L, C, R, θ , Q/D, |Z|
- Basic accuracy 0.2%
- 5 measurement frequencies:
100 Hz, 120 Hz, 1 kHz, 10 kHz, 25 kHz

Universal Counter 1.6 GHz HM8021-4



Key facts

- Measurement range 0 Hz to 1.6 GHz
- 10 MHz time base with 1 ppm stability (TCXO)
- Input A: input impedance 1 MΩ, sensitivity 20 mV_{rms}
- Input C: input impedance 50 Ω, sensitivity 30 mV_{rms}
- 8-digit resolution for 10 s measuring time

Function Generator 10 MHz HM8030-6



Key facts

- Frequency range 50 mHz to 10 MHz, output voltage up to 10 V_{pp} (into 50 Ω)
- Waveforms: sine wave, triangle, square wave, pulse, DC
- Distortion factor < 0.5% up to 1 MHz, rise and fall time typ. 15 ns

Tripple Power Supply HM8040-3



Key facts

- 2 x 0 to 20 V/0.5 A | 1 x 5 V/1 A
- 3-digit switchable displays (display resolution 0.1 V/1 mA)
- Pushbutton to activate / deactivate all outputs

Blank Module HM800



Key facts

- Module for customized instrument construction
- Guide rails for mounting circuit boards at 4 different levels
- Plastic front panel for easy mechanical processing

High voltage probe HZO20

Attenuation ratio:	1,000:1
Bandwidth:	400 MHz
Input impedance:	50 MΩ 7.5 pF
Max. voltage:	1,000 V _{rms}



1GHz active probe HZO30

Attenuation ratio:	10:1
Bandwidth:	1 GHz
Input impedance:	1 MΩ 0.9 pF
Max. voltage:	20V

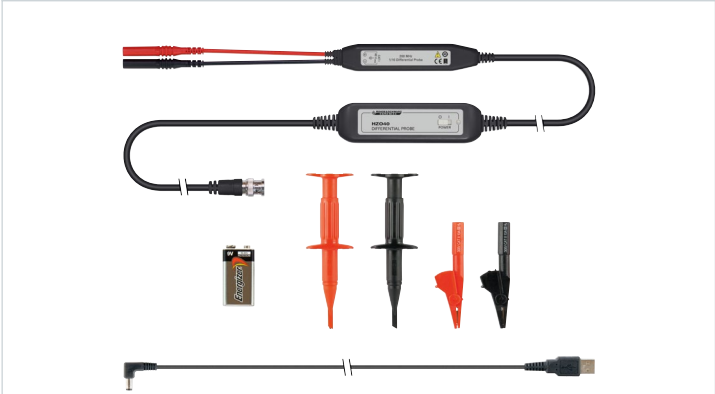


Active differential probes HZO40 | HZO41

	HZO40	HZO41
Attenuation ratio:	10:1	10:1
Bandwidth:	200 MHz	800 MHz
Gain accuracy:	±1%	±2%
Max. input voltage per input:	±60V	±40V
Input impedance between inputs:	1 MΩ 3.5 pF	200 kΩ 1 pF
CMRR (typical):	-80 dB at 60 Hz -50 dB at 10 MHz	-60 dB at 60 Hz -15 dB at 500 MHz
Battery operation:	9V battery 6LR61	9V battery 6LR61

Active differential high voltage probe HZ115

Differential input voltage (AC _{rms}):	1,000V
Attenuation ratio:	100:1 / 1,000:1
Bandwidth:	20/30 MHz
Input impedance:	60 MΩ 1.5 pF



HZO40



HZO41

19" rackmount kits (width 482 mm) HZ42 | HZ43 | HZ46 | HZC95 | HZO91 | HZP91

HZ42 (2RU / 88 mm*):
Instrument height 75 mm (for Series 8100, HM8143, HM7042-5, HM8001-2, HMP2020, HMP2030 and HMF series)

HZC95 (2RU / 88 mm*):
Instrument height 88 mm (for HMC8012)

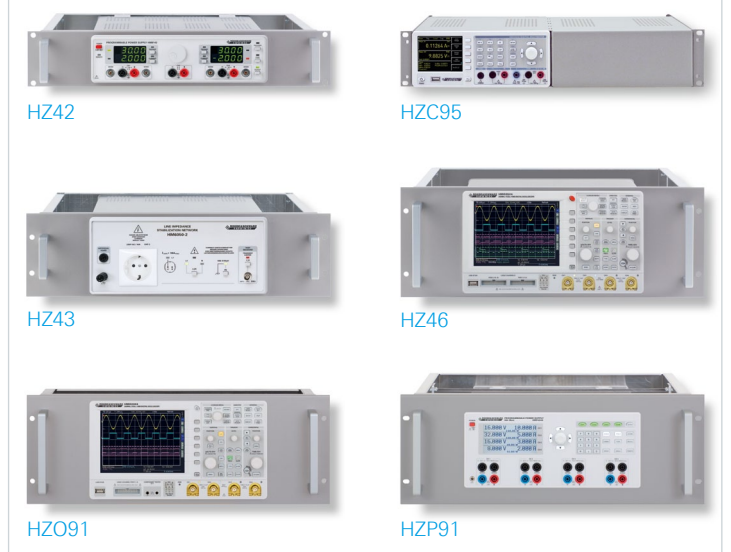
HZ43 (3RU / 132.5 mm*):
Instrument height 125 mm (for HM6050-2)

HZ46 (4RU / 177 mm*):
Instrument height 175 mm (for HMO series 3000 and HMS series)

HZO91 (4RU / 177 mm*):
Instrument height 175 mm (for HMO72X, HMO102X, HMO152X, HMO202X)

HZP91 (4RU / 177 mm*):
Instrument height 125 mm (for HMP4030, HMP4040)

*plus excess of the instrument




AC/DC current probes HZO50 | HZO51

	HZO50	HZO51
Measurement range:	±20 A _{rms} / 30 A _p	±100 A _{rms} / 1,000 A _{rms}
Accuracy:	±1% / ±2 mA	±1% / ±0.1 A / ±0.5 A
Bandwidth:	DC to 100 kHz (0.5 dB)	DC to 20 kHz
Max. voltage:	300 V _{rms} (AC or DC)	300 V _{rms} (AC or DC)




Ethernet/USB dual interface card HO730

- Ethernet 10/100 MBit/s with integrated webserver
- Remote control via browser interface
- USB 2.0, Type B connector
- For all devices of HMF, HMO, HMP and HMS series



IEEE-488 (GPIB) interface card HO740

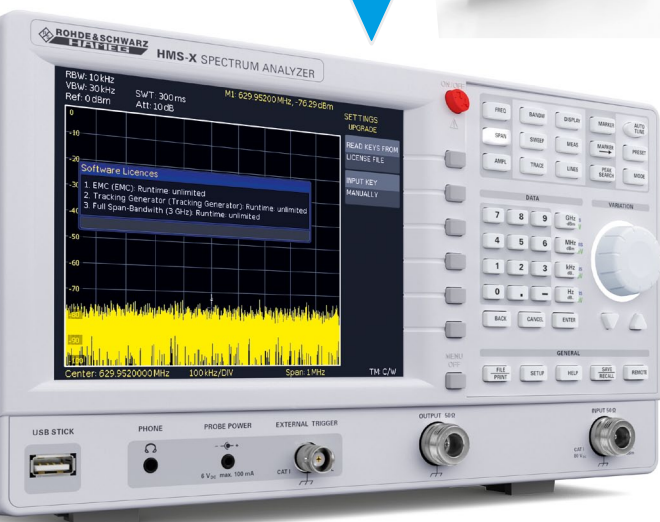
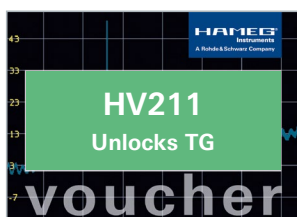
- 24-pin connection in accordance with IEEE-488 (GPIB)
- Galvanic separation of measurement device and interface
- For all devices of HMF, HMO, HMP and HMS series



Upgrade at any time

You can easily upgrade all available options for the HMO oscilloscopes and HMS-X spectrum analyzer at any later point in time. This is done with option upgrade vouchers available at your dealer.

The voucher number and the serial number of your instrument enable you to generate the respective licence key directly on our dedicated web page <http://voucher.hameg.com>.



Options for all HMO oscilloscopes

Voucher code	Option code	Description
HV110	HOO10	I ² C, SPI, UART/RS-232 trigger and decode option on analog and digital channels
HV111	HOO11	I ² C, SPI, UART/RS-232 trigger and decode option on analog channels
HV112	HOO12	CAN/LIN trigger and decode option on analog and digital channels



Options for HMO03000 series

Voucher code	Option code	Description
HV114	HOO14	Segmented memory option
HV352	HOO352	Bandwidth upgrade for 2 channel models from 300 MHz to 500 MHz
HV354	HOO354	Bandwidth upgrade for 4 channel models from 300 MHz to 500 MHz
HV452	HOO452	Bandwidth upgrade for 2 channel models from 400 MHz to 500 MHz
HV454	HOO454	Bandwidth upgrade for 4 channel models from 400 MHz to 500 MHz



Options for HMS-X spectrum analyzer

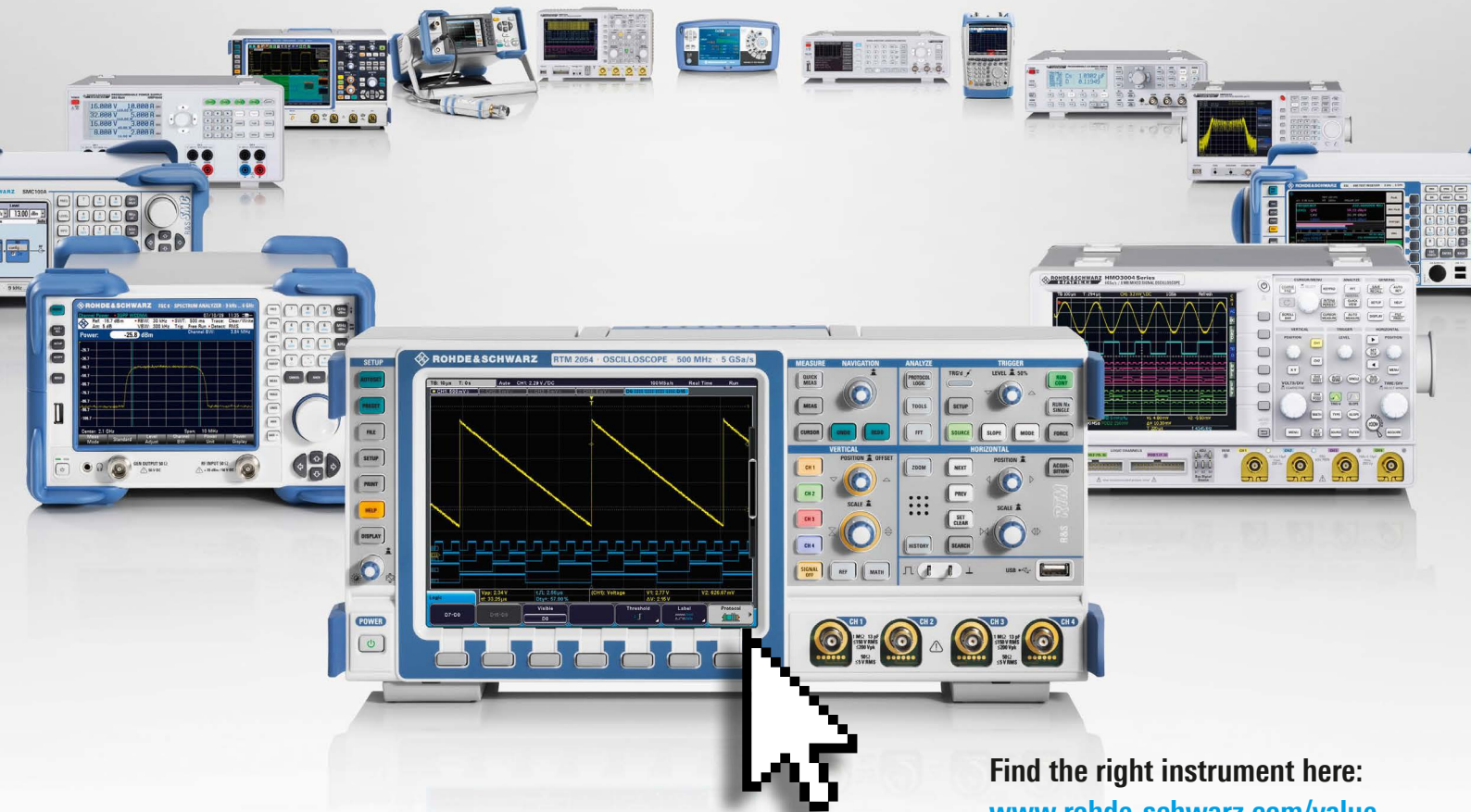
Voucher code	Option code	Description
HV211	HMS-TG	Tracking Generator for HMS-X
HV212	HMS-3G	3GHz upgrade HMS-X
HV213	HMS-EMC	EMC Option incl. Pre-amplifier for HMS-X

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