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Instruments

It's a pleasure



to measure

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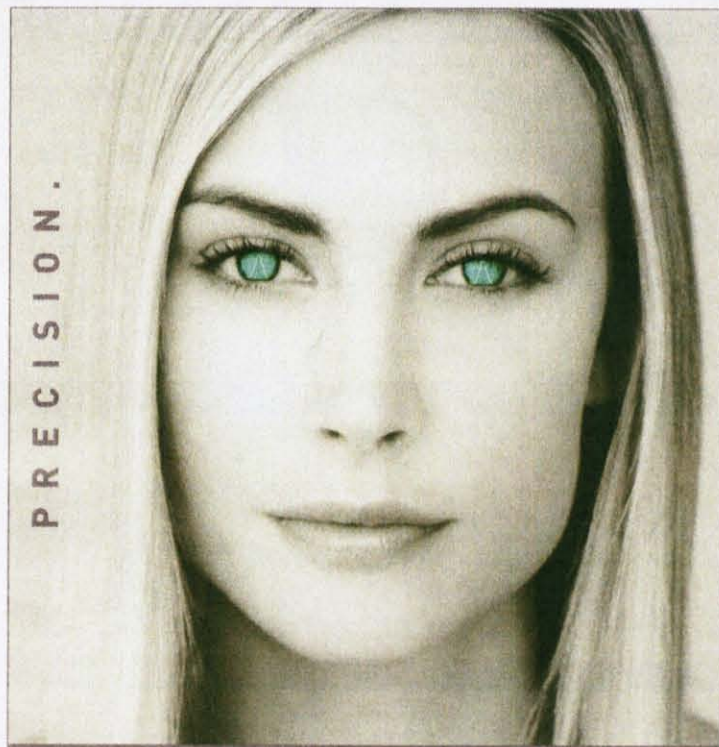
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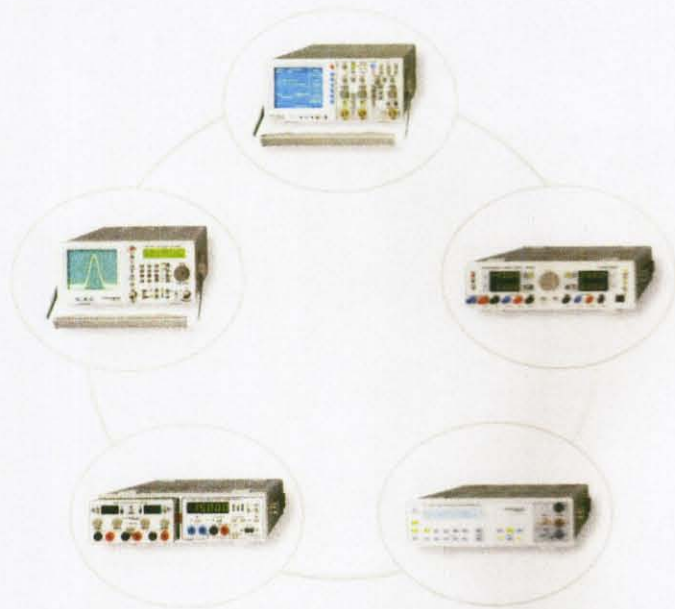
PRECISION.



Products 2005
Spring



HAMEG
Instruments



Oscilloscopes

Spectrum Analyzers

Power Supplies

Modular Systems
Series 8000

Programmable
Measuring Instruments
Series 8100

Oscilloscopes

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Programmable Measuring Instruments Series 8100

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CombiScope

150 MHz Analog/Digital
Mixed Signal CombiScope
HM1508

NEW



Analog mode: see HM1500 (page 9)

4 Channels (2 Analog, 2 Logic)

**1 GSa/s Real Time Sampling,
10 GSa/s Random Sampling**

Pre-/Post-Trigger - 100 % to +400 %

8-Bit Low Noise Flash A/D Converters

Time Base 50 s/cm - 5 ns/cm

**1 MPts memory per channel allows zoom
up to 40,000:1**

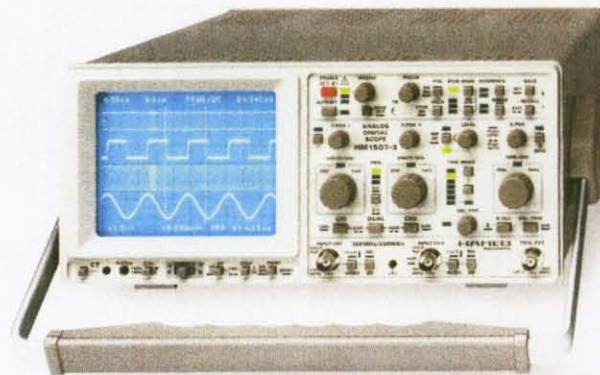
Acquisition modes: Single Event, Refresh,
Average, Envelope, Roll, Peak-Detect

RS-232 Interface, optional: RS-232/USB,
IEEE-488, Ethernet

Signal display: Yt and XY;
Interpolation: Sinx/x, Pulse, Dot Join (linear)

Oscilloscopes

150 MHz Analog/Digital
Oscilloscope
HM1507-3



150 MHz bandwidth in analog mode, otherwise
see HM1004-3 (page 11)

Digital mode:

Single, refresh, envelope, average, roll
and XY modes

Ultra-low-noise 8-bit Flash A/D converters with
max. 200 MSa/s real time sampling and 2 kPts
memory per channel

Pre-/Post-Trigger - 75 % to +100 %

Digital time base A: 100 s - 100 ns/cm;
B: 20 ms - 100 ns/cm, with X magnification
up to 10 ns/cm

Peak-detect function for glitch detection,
two reference memories

RS-232 interface for control and signal data
transfer, incl. Windows® software

CombiScope

100 MHz Analog/Digital
CombiScope

HM1008

NEW



Analog Mode: see HM1000 (page 10)

Two Channels

**1 GSa/s Real Time Sampling,
10 GSa/s Random Sampling**

8-Bit Low Noise Flash A/D Converters

Pre-/Post-Trigger - 100 % to +400 %

Time Base 50 s/cm – 5 ns/cm

**1 MPts memory per channel allows zoom
up to 40,000:1**

Acquisition modes: Single Event, Refresh,
Average, Envelope, Roll, Peak-Detect

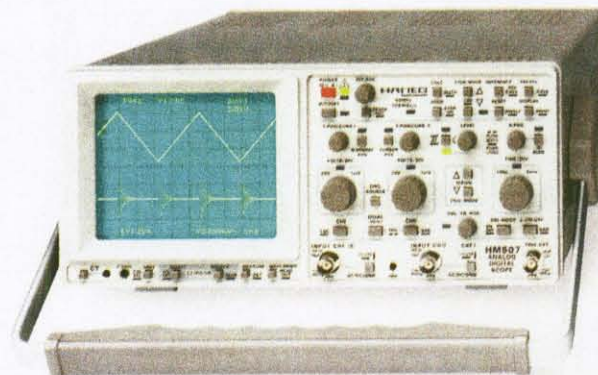
RS-232 Interface, optional: RS-232/USB,
IEEE-488, Ethernet

Signal display: Yt and XY;
Interpolation: Sinx/x, Pulse, Dot Join (linear)

Oscilloscopes

50 MHz Analog/Digital
Oscilloscope

HM507



Specifications and functions, see HM504 (page 12)

Digital mode:

Single, refresh, envelope, average, roll
and XY modes

Ultra-low-noise 8-bit Flash A/D converters with
max. 100 MSa/s real time sampling, 2 GSa/s
random sampling and 2 kPts memory per
channel

Pre-/Post-Trigger - 10 cm to +10 cm

Digital time base 100 s – 100 ns/cm,
with X magnification up to 20 ns/cm

Programmable mathematical signal processing

RS-232 interface for control and signal data
transfer, incl. Windows® software

Oscilloscopes

200 MHz Analog Oscilloscope HM2005



Two channels with deflection coefficients of
1 mV – 5 V/cm, low noise amplifiers

Two time bases (0.5 s – 20 ns/cm and
20 ms – 20 ns/cm), X x 10 to 2 ns/cm) allow for
complete signal and signal portion display with
a maximum of 1,000-fold X magnification

Triggering (time bases A and B) from
0 – 300 MHz from 5 mm signal level

14 kV CRT features high writing speed and
allowing the display of slowly repeating
fast signals

Autoset, cursor measurement functions,
readout

Maximum of 2.5 million signal displays per sec.

RS-232 interface (for parameter queries and
control only)

Oscilloscopes

150 MHz 2 Channel Analog Oscilloscope HM1500



Two Channels with deflection coefficients of
1 mV – 20 V/cm

Low noise measuring amplifiers with high pulse
fidelity

Two Time Bases: 0.5 s – 5 ns/cm and
20 ms – 5 ns/cm

Videotrigger: Odd and even frames,
line selection (525/60 and 625/50 standard)

200 MHz 6-Digit Frequency Counter, Cursor and
automatic measurement

14 kV high writing speed CRT, Readout, Autoset,
Delay Line, no fan

Save/Recall Memories for instrument settings

Help function, multilingual menu

Oscilloscopes

100 MHz 2 Channel Analog Oscilloscope

HM1000



Two Channels with deflection coefficients of 1 mV – 20 V/cm

Low noise measuring amplifiers with high pulse fidelity

Two Time Bases: 0.5 s – 5 ns/cm and 20 ms – 5 ns/cm

Videotrigger: Odd and even frames, line selection (525/60 and 625/50 standard)

200 MHz 6-Digit Frequency Counter, Cursor and automatic measurement

14 kV high writing speed CRT, Readout, Autoset, Delay Line, no fan

Save/Recall Memories for instrument settings

Help function, multilingual menu

Oscilloscopes

100 MHz Analog Oscilloscope HM1004-3



Two channels with deflection coefficients of 1 mV – 20 V/cm, low noise amplifiers

Two time bases (0.5 s – 50 ns/cm and 20 ms – 50 ns/cm), X x 10 to 5 ns/cm) allow for complete signal and signal portion display with a maximum of 1,000-fold X magnification

Triggering (time bases A and B) from 0 – 200 MHz from 5 mm signal level

14 kV CRT features high writing speed allowing the display of slowly repeating fast signals

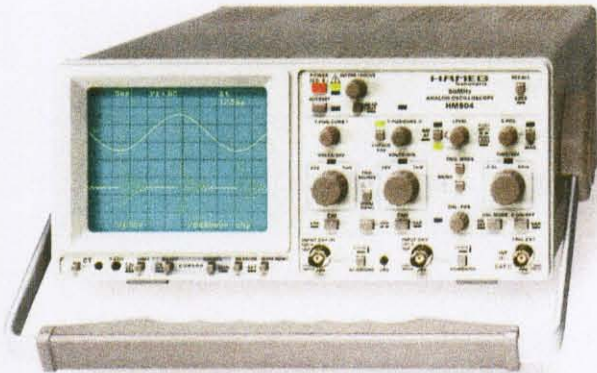
Y delay line

Manual and automatic cursor measurement functions

RS-232 interface (for parameter queries and control only)

Oscilloscopes

50 MHz Analog Oscilloscope HM504-2



2 channels with deflection coefficients of 1 mV – 20 V/cm, low background noise, time base 0.5 s – 50 ns/cm (with X magnification to 10 ns)

Triggering from 0 to 100 MHz from 5 mm signal level

Time base delay provides allows high X magnification of any portion of the signal

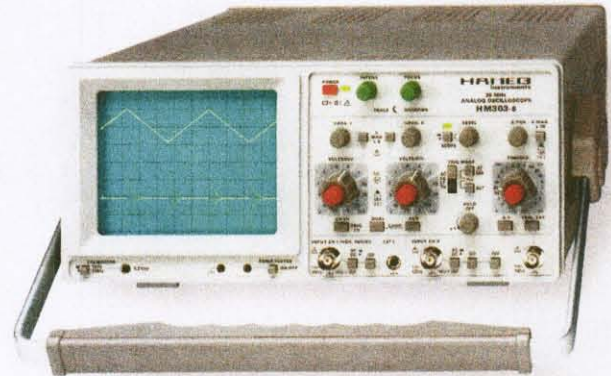
Automatic amplitude, frequency (up to 100 MHz) and period measurement

Maximum of 1 million signal displays per second in optimum analog quality

RS-232 interface (for parameter queries and control only)

Oscilloscopes

35 MHz Analog Oscilloscope HM303-6



Maximum signal fidelity with minimum overshoot

2 channels with deflection coefficients of 1 mV – 20 V/cm, low noise amplifiers

Time base 0.2 s – 100 ns/cm, with X magnification to 10 ns/cm

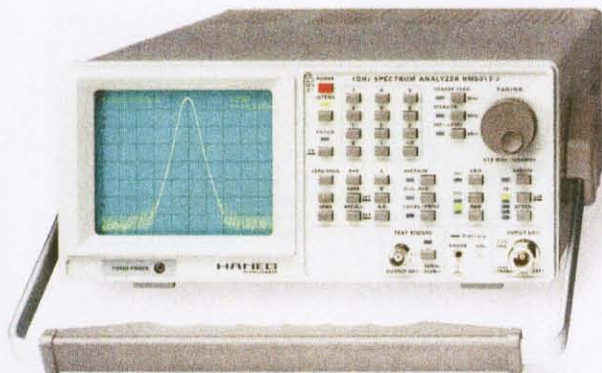
Triggering from 0 to 50 MHz from 5 mm signal level (100 MHz > 8 mm)

Analog mode provides unexcelled signal presentation at high resolution and up to 500,000 signal displays/sec.

Yt, XY and component-test modes

Spectrum Analyzer

1 GHz Spectrum Analyzer HM5012-2



Frequency range: 150 kHz to 1 GHz

Amplitude measurement range:
- 100 dBm to + 10 dBm

Phase-synchronous, direct digital frequency
synthesis

Resolution bandwidths (RBW): 9 kHz, 120 kHz
and 1 MHz

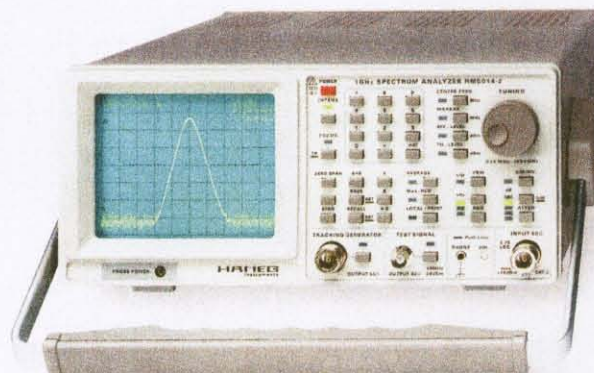
Pre-compliance EMI measurement

Serial interface for documentation and control
software for documentation included

Additional measurement functions for EMI
measurements with optional software

Spectrum Analyzer

1 GHz Spectrum Analyzer with Tracking Generator HM5014-2



Frequency range: 150 kHz to 1 GHz

Amplitude measurement range:
- 100 dBm to + 10 dBm

Phase-synchronous, direct digital frequency
synthesis

Resolution bandwidths (RBW): 9 kHz, 120 kHz
and 1 MHz

Pre-compliance EMI measurement

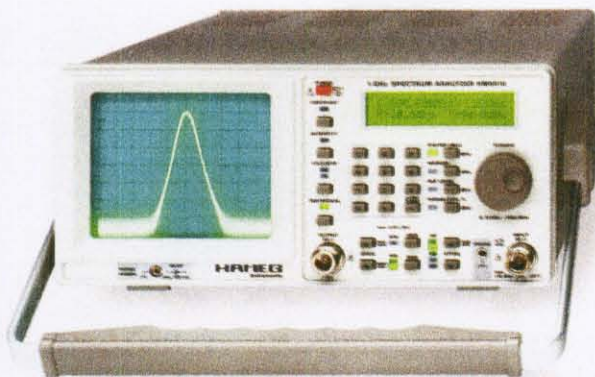
Serial interface for documentation and control
software for documentation included

Additional measurement functions for EMI
measurements with optional software

Tracking Generator with output amplitude from
- 50 dBm to + 1 dBm

Spectrum Analyzer

1 GHz Spectrum Analyzer
HM5510



Frequency range: 150 kHz to 1 GHz

Amplitude measurement range:
- 100 dBm to + 10 dBm

Phase-synchronous, direct digital frequency
synthesis

Resolution bandwidths (RBW):
20 kHz and 500 kHz

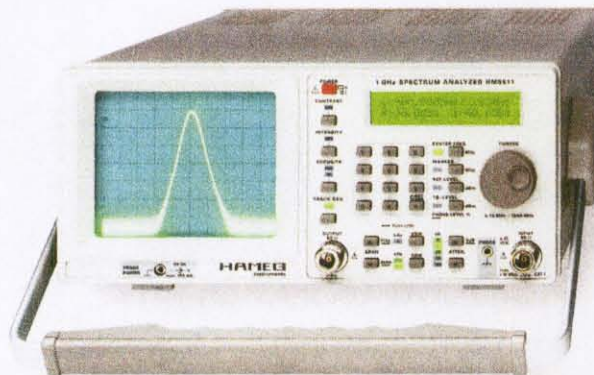
Keypad for frequency and amplitude setting

Analog signal processing and display

Test signal output

Spectrum Analyzer

1 GHz Spectrum Analyzer
with Tracking Generator
HM5511



Frequency range: 150 kHz to 1 GHz

Amplitude measurement range:
- 100 dBm to + 10 dBm

Phase-synchronous, direct digital frequency
synthesis

Resolution bandwidths (RBW):
20 kHz and 500 kHz

Keypad for frequency and amplitude setting

Analog signal processing and display

Tracking Generator with output amplitude of
- 50 dBm to + 0 dBm

Power Supplies

Triple Power Supply HM7042-5



Fig. similar

2x 0-32V/0-2A 0-5.5V/0-5A

Separate voltage and current displays for each output: 4 digits at channel I+III; 3 digits at channel II

Display resolution: 10 mV/1 mA at outputs I+III; 10 mV/10 mA at output II

Adjustable current limiting and electronic fuse for each output

Pushbutton for activating/deactivating all outputs

Low residual ripple, high output power, very good regulation

Temperature-controlled fan

Power Supplies

Quadruple High-Performance Power Supply HM7044



4x 0-32V/0-3A

Up to 384 W output power; pre-regulation with DC/DC converter ensures low dissipated power

4-digit displays for current and voltage

Display resolution 10 mV/1 mA

Linear inline regulator with low residual ripple

Tracking mode for all outputs

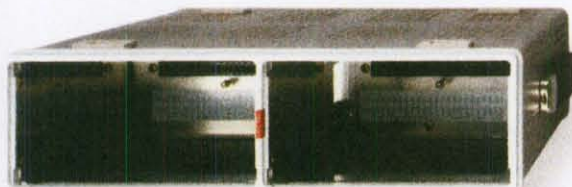
Adjustable current limiting and electronic fuse for each output

SENSE lines for each output

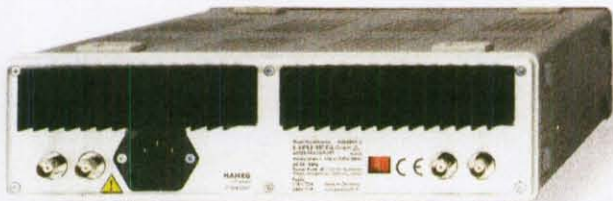
Temperature-controlled fan

Series 8000

Mainframe
HM8001-2



Frontview without modules



Rearview (with Option H0801)

Base unit for inserting modules from the 8000 series modular system

Power supply for two modules

Up to 5 mainframes can be stacked

Series 8000

4³/₄ - Digit Multimeter
HM8010



4³/₄ - digit display with 50,000 counts, basic accuracy 0.05%

Automatic and manual range selection

Max resolution 10 μ V, 0.01 dBm, 10 nA, 10 m Ω , 0.1 $^{\circ}$ C/ $^{\circ}$ F

4³/₄ - Digit Programmable
Multimeter
HM8012



4³/₄ - digit display with 50,000 counts, basic accuracy 0.05%

Automatic and manual range selection

Max resolution 10 μ V, 0.01 dBm, 10 nA, 10 m Ω , 0.1 $^{\circ}$ C/ $^{\circ}$ F

RS-232 interface

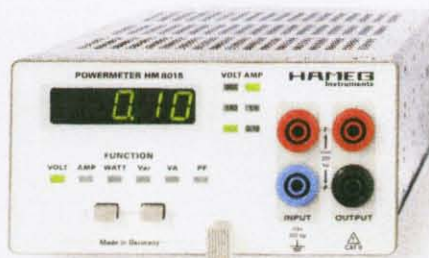
Series 8000

3½ -Digit Milliohm Meter HM8014



- Measurement ranges from 200 mΩ to 20 kΩ
- Resolution 100 μΩ, basic accuracy 0.25 %
- 4-wire Kelvin measurement
- Low measurement voltages from 4 mV to 200 mV
- Low measurement current from 10 μA to 20 mA

3 kW Power Meter HM8015



- Power measurement (AC/DC) up to 3 kW
- Automatic range selection, easy operation
- 6 measurement functions
- Display of power factor
- Frequency range up to 1 kHz

Series 8000

3½ -Digit LC Meter HM8018



- Measurement functions: L, C, R
- 3½ - digit display with 2,000 counts, basic accuracy 0.5 %
- 4-wire measurement
- Max. resolution: 0.1 pF, 0.1 μH, 10 mΩ, 0.01 μS

1.6 GHz Universal Counter HM8021-4



- Frequency range: 0 Hz – 1.6 GHz
- 10 MHz time base with 0.5 ppm stability (TCXO)
- Time interval resolution up to 10 ps
- Offset mode over the entire measurement range
- Gate input (in combination with H0801)

Series 8000

Distortion Meter HM8027



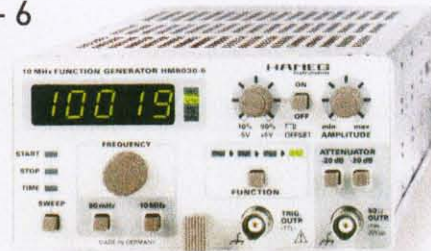
Frequency range: 20 Hz – 20 kHz

Resolution up to 0.01 %

Low inherent distortion of 0.005 %

Automatic frequency fine tuning
(capture range 15 %)

10 MHz Function Generator HM8030-6



Frequency range: 50 mHz – 10 MHz

High signal purity and amplitude stability

Distortion factor < 0.5 % up to 1 MHz

Output voltage: 20 V_{pp} (10 V_{pp} into 50 Ω)

Surge and short-circuit proof output

Series 8000

20 MHz Pulse Generator HM8035



Frequency range: 2 Hz – 20 MHz

Pulse duration 20 ns to 200 ms with a duty factor
of up to 99.9999 %

2 separate outputs (positive/negative)
Rise time < 3 ns

Single pulse triggering

50 kHz Low-Distortion Sine Wave Generator HM8037



Frequency range: 5 Hz – 50 kHz

A complete measurement system for audio
in combination with the HM8027

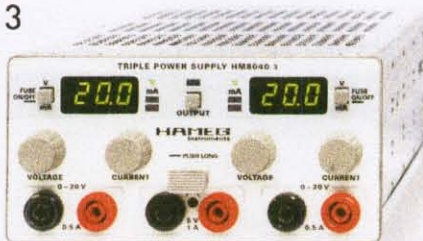
3-digit digital frequency display

High amplitude stability

Distortion factor < 0.01 % (20 Hz – 10 kHz)

Series 8000

Triple Power Supply HM8040-3



2x 0-20V/0.5A 5V/1A

Electronic fuse

3-digit switchable displays for current and voltage

Display resolution 0.1V/1 mA

Adjustable current limiting

Blank module

HM800



Module for customized instrument construction

Guide rails for mounting circuit boards
at 4 different levels

Plastic front panel for easy processing

Power is supplied by the mainframe HM8001-2

Series 8100

6½-Digit Precision Multimeter HM8112-3



6½ - digit display (1,200,000 counts)

Resolution 100 nV, 100 pA, 100 μΩ, 0.01 °C/F

DC basic accuracy 0.003 %

2-wire / 4-wire measurements

Measurement intervals adjustable from 0.1 to
60 sec.

Up to 100 measurements transmitted to PC per
second

True RMS measurement, AC+DC and AC

Offset correction

RS-232 interface

Series 8100

8 kW Power Meter HM8115-2



- Power measurement up to 8 kW
- Simultaneous voltage, current and power display
- Display of apparent, effective and reactive power
- Power factor display
- Autoranging, simple operation
- Suitable for measurements on frequency converters
- Frequency range DC to 1 kHz
- RS-232 interface (including software)

Series 8100

2.6 GHz Universal Counter HM8123



Fig. similar

- Frequency range from 0 Hz to 2.6 GHz
- 200 MHz time base with 0.2 ppm stability
- Two identical inputs, up to 200 MHz each
- 9-digit resolution at 1 sec. gate time
- 9 measurement functions, external gate and arming
- Input for external time base (reference signal 10 MHz)

Series 8100

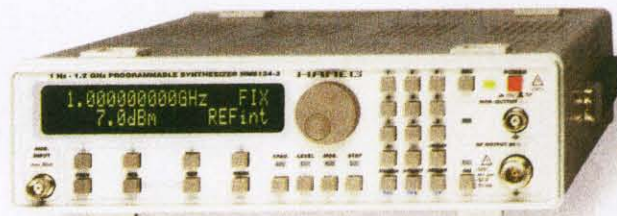
15 MHz Arbitrary Function Generator HM8131-2



- Frequency range from 100 μ Hz to 15 MHz
- DDS signal generator (frequency stability 10 ppm)
- 6 standard signal forms and arbitrary
- Master-slave mode for up to 3 generators
- SRAM memory card for signal storage (Option H0831)
- Increased frequency stability with TCXO (Option H086): $\pm 5 \times 10^{-7}$ at 23° C (24 hrs.)

Series 8100

1.2 GHz RF-Synthesizer HM8134-3



- Frequency range from 1 Hz to 1.2 GHz
- Frequency resolution 1 Hz (accuracy 0.5 ppm)
- Output power from -127 dBm to +13 dBm
- High spectral purity
- AM / FM / PM and gate modulation

Series 8100

Arbitrary Power Supply HM8142



- 2x 0-30V/0-1 A 5V/0-2A
- Display resolution 10 mV/1 mA
- Arbitrary waveform power supply (512 points)
- Tracking mode for 30V outputs
- External modulation of output voltages
- Electronic load up to 30W per channel (max. 1 A)
- SENSE lines
- Multimeter mode for all adjustable outputs

Preview 2005

HM2008 200 MHz Mixed Signal CombiScope

- 2 GSa/s (Real Time Sampling),
- 25 GSa/s (Random Sampling),
- 2 MPts Memory per Channel,
- RS-232 Interface

HM5530 3 GHz Spectrum Analyzer with YIG Oscillator and RS-232 Interface

HM8124 12 GHz Universal Counter with RS-232 Interface (IEEE-488 optional)

HM8135 3 GHz RF-Synthesizer with RS-232 and USB Interface (IEEE-488 optional)

Notes

More than
1 Million
Oscilloscopes
sold

