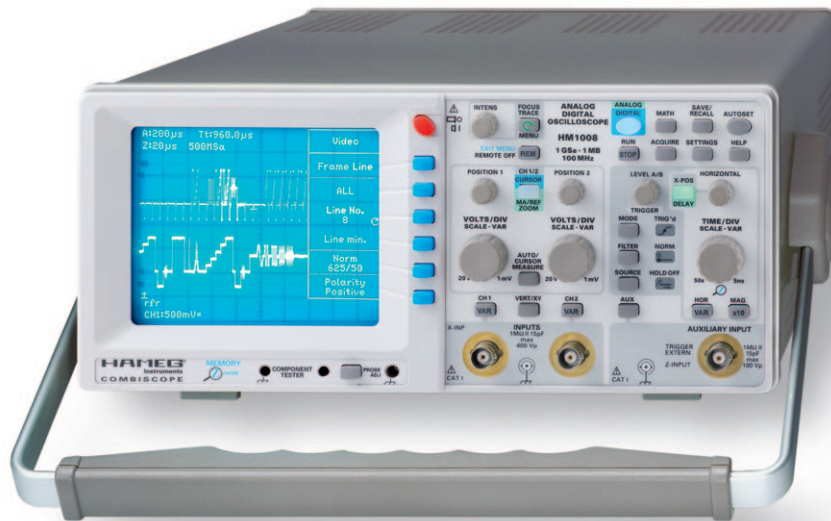
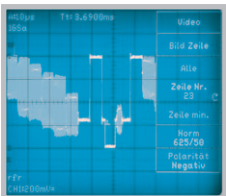


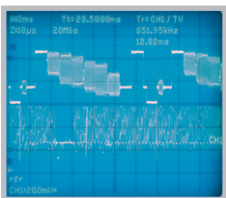
# 100 MHz CombiScope® HM1008



Either PAL or NTSC: Line triggering with line counter



Digital Mode: TV field and zoomed display of one selected line



Cursor measurement choices in digital mode

Russisch	Measurement	Cursor 2
Zeit	Spitze Spitze	Measure
Frequenz	Spitze -	at C
anst. Zeit	Spitze -	
Spannung	Mittelwert	
Ust/Rausch	Effektivwert	
Verhältnis V	Zähler	
Verstärkung	Uh Marker	Klicken
		an Aus
		Setzen
		Cursor
		an Aus

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

**1 MPts memory per channel allows Memory Zoom up to 50,000:1**

**Two Channels**

**8-Bit Low Noise Flash A/D Converters**

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

**Time Base 50 s/cm – 5 ns/cm**

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

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

**Signal display: Yt and XY;**

**Interpolation: Sinx/x, Pulse, Dot Join (linear)**

**Analog Mode: see HM1000**



# 100 MHz CombiScope® HM1008

Valid at 23 °C after a 30 minute warm-up period

## Vertical Deflection

### Channels:

Analog:	2
Digital:	2

### Operating Modes:

Analog:	CH 1 or CH 2 separate, DUAL (CH 1 and CH 2 alternate or chopped), Addition
Digital:	CH 1 or CH 2 separate, DUAL (CH 1 and CH 2), Addition

### X in XY-Mode:

CH 1

### Invert:

CH 1, CH 2

### Bandwidth (-3 dB):

2 x 0 - 100 MHz

### Rise time:

< 3.5 ns

### Overshoot:

max. 1%

### Bandwidth limiting (selectable):

about 20 MHz (5 mV/cm - 20V/cm)

### Deflection Coefficients(CH1,2):

14 calibrated steps

1 mV - 2 mV/cm (10 MHz) ± 5% (0 - 10 MHz [-3 dB])

5 mV - 20 V/cm ± 3% (1-2-5 sequence)

variable (uncalibrated): > 2.5:1 to > 50V/cm

### Inputs CH 1, 2:

Impedance:	1 MΩ II 15 pF
Coupling:	DC, AC, GND (ground)
Max. Input Voltage:	400V (DC + peak AC)

### Y Delay Line (analog):

70 ns

### Measuring Circuits:

Measuring Category I

### Analog mode only:

Auxiliary input:	
Function (selectable):	Extern Trigger, Z (unblank)
Coupling:	AC, DC
Max. input voltage:	100V (DC +peak AC)

## Triggering

Analog and Digital Mode	
Automatic (Peak to Peak):	
Min. signal height:	5 mm
Frequency range:	10 Hz - 200 MHz
Level control range:	from Peak- to Peak+

Normal (without peak):	Slope/Video
Min. signal height:	5 mm
Frequency range:	0 - 200 MHz
Level control range:	-10 cm to +10 cm

Operating modes:	Slope/Video
Slope:	positive, negative, both
Sources:	CH 1, CH 2, alt. CH 1/2 (≥ 8 mm), Line, Ext.
Coupling:	AC: 10 Hz-200 MHz DC: 0-200 MHz HF: 30 kHz-200 MHz LF: 0-5 kHz

Video:	pos./neg. Sync. Impulse
Standards:	525 Line/60 Hz Systems 625 Line/50 Hz Systems
Field:	even/odd/both
Line:	all/line number selectable
Source:	CH 1, CH 2, Ext.

Indicator for trigger action:	LED
External Trigger via:	Auxiliary Input (0.3V <sub>pp</sub> , 100 MHz)
Coupling:	AC, DC
Max. input voltage:	100V (DC +peak AC)

Digital mode	
Pre/Post Trigger:	-100% to +400% related to complete memory

Analog mode	
2nd Trigger	
Min. signal height:	5 mm
Frequency range:	0 - 200 MHz
Coupling:	DC
Level control range:	-10 cm to +10 cm

## Horizontal Deflection

Analog mode	
Operating modes:	A, ALT (alternating A/B), B
Time base A:	0.5 s/cm - 50 ns/cm (1-2-5 sequence)
Time base B:	20 ms/cm - 50 ns/cm (1-2-5 sequence)
Accuracy A and B:	± 3%
X Magnification x10:	to 5 ns/cm
Accuracy:	± 5%
Variable time base A/B:	cont. 1:2.5
Hold Off time:	var. 1:10 [LED-Indication]
Bandwidth X-Amplifier:	0 - 3 MHz [-3 dB]

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Bandwidth X-Amplifier:	0 - 3 MHz [-3 dB]

**Accessories supplied:** Line cord, Operating manual, 2 Probes 10:1 with attenuation ID, Windows Software for control and data transfer  
**Optional accessories:** H0720 Dual-Interface RS-232/USB, H0730 Dual-Interface Ethernet/USB, H0740 Interface IEEE-488 (GPIB), HZ70 Opto-Interface (with optical fiber cable)

X Y phase shift < 3°:	< 220 kHz
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## Digital mode

Time base range (1-2-5 sequence)	
Refresh Mode:	20 ms/cm - 5 ns/cm
with Peak Detect:	20 ms/cm - 2 ms/cm (min. Pulse Width 10 ns)
Roll Mode:	50 s/cm - 50 ms/cm

## Accuracy time base

Time base:	50 ppm
Display:	± 1%

## MEMORY ZOOM:

Bandwidth X-Amplifier:	max. 50,000:1
Bandwidth X-Amplifier:	0 - 100 MHz [-3 dB]
X Y phase shift < 3°:	< 100 MHz

## Digital Storage

Acquisition (real time):	2x 500 MSa/s, 1 GSa/s interleaved
Acquisition (random sampling):	10 GSa/s
Bandwidth:	2 x 0 - 100 MHz (random)
Memory:	1 M-Samples per channel
Operating modes:	Refresh, Average, Envelope/ Roll: Free Run/Triggered, Peak-Detect

## Resolution (vertical):

Resolution (horizontal):	8 Bit (25 Pts/cm)
Yt:	11 Bit (200 Pts/cm)
XY:	8 Bit (25 Pts /cm)

## Interpolation:

Delay:	Sinx/x, Dot Join (linear)
Display refresh rate:	1 Million * 1/Sampling Rate to 4 Million * 1/Sampling Rate
Display:	max. 170/s at 1 MPts
Display:	Dots (acquired points only), Vectors (partly interpolated), optimal (complete memory weighting and vectors)

## Reference Memories:

Reference Memories:	9 with 2 kPts each (for recorded signals)
Display:	2 signals of 9 (free selectable)

## Operation/Measuring/Interfaces

Operation:	Menu (multilingual), Autoset, help functions (multilingual)
Save/Recall (instrument parameter settings):	9
Signal display:	max. 4 traces
analog:	CH 1, 2 (Time Base A) in combination with CH 1, 2 (Time Base B)
digital:	CH1,2 and ZOOM or Reference or Mathematics)

Frequency counter:	
6 digit resolution:	>1 MHz - 200 MHz
5 digit resolution:	0.5 Hz - 1 MHz
Accuracy:	50 ppm

Auto Measurements:	
Analog mode:	Frequency, Period, Vdc, Vpp, Vp+, Vp-
also in digital mode:	V <sub>rms</sub> , V <sub>avg</sub>

Cursor Measurements:	
Analog mode:	Δt, 1/Δt (f), t <sub>r</sub> , ΔV, V to GND, ratio X, ratio Y
plus in digital mode:	V <sub>pp</sub> , V <sub>p+</sub> , V <sub>p-</sub> , V <sub>avg</sub> , V <sub>rms</sub> , pulse count
Resolution Readout/Cursor:	1000 x 2000 Pts, Signals: 250 x 2000
Interfaces (plug-in):	RS-232 (H0710)
Optional:	IEEE-488, Ethernet, Dual-Interface RS-232/USB

Mathematic functions	
Number of Formula Sets:	5 with 5 formulas each
Sources:	CH 1, CH 2, Math 1-Math 5
Targets:	5 math. memories, Math 1-5
Functions:	ADD, SUB, 1/X, ABS, MUL, DIV, SQ, POS, NEG, INV
Display:	max. 2 math. memories (Math 1-5)

Display	
CRT:	D14-375GH
Display area (with graticule):	8 cm x 10 cm
Acceleration voltage:	approx. 14 kV

General Information	
Component tester	
Test voltage:	approx. 7V <sub>rms</sub> (open circuit), approx. 50 Hz
Test current:	max. 7 mA <sub>rms</sub> (short circuit)
Reference Potential :	Ground (safety earth)
Probe ADJ Output:	1 kHz/1 MHz square wave signal 0.2V <sub>pp</sub> (tr < 4 ns)
Trace rotation:	electronic
Line voltage:	105 - 253V, 50/60 Hz ± 10 %, CAT II
Power consumption:	42 Watt at 230V, 50 Hz
Protective system:	Safety class I (EN61010-1)
Weight:	5.6 kg
Cabinet (W x H x D):	285 x 125 x 380 mm
Ambient temperature:	0°C ...+40°C

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