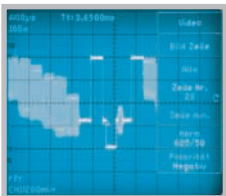


100 MHz Analog - / Digital  
CombiScope  
HM1008

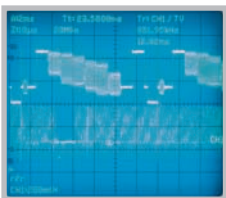
**NEW**



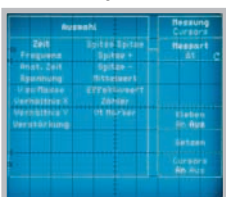
Either PAL or NTSC: Line triggering with line counter



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



Cursor measurement choices in digital mode



Analog Mode: see HM1000

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 50,000:1

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)



# 100 MHz Analog/Digital CombiScope HM1008

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

## Vertical Deflection

<b>Channels:</b>	
Analog:	2
Digital:	2
<b>Operating Modes:</b>	
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
Y 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 %
<b>Deflection Coefficients (CH 1, 2):</b> 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 > 50 V/cm
<b>Inputs CH 1, 2:</b>	
Impedance:	1 MΩ    15 pF
Coupling:	DC, AC, GND (ground)
Max. Input Voltage:	400 V (DC + peak AC)
Y Delay Line (analog):	70 ns
Measuring Circuits:	Measuring Category I
<b>Analog mode only:</b>	
<b>Auxiliary input:</b>	
Function (selectable):	Extern Trigger, Z (unblank)
Coupling:	AC, DC
Max. input voltage:	100 V (DC +peak AC)

## Triggering

<b>Analog and Digital Mode</b>	
<b>Automatic (Peak to Peak):</b>	
Min. signal height:	5 mm
Frequency range:	10 Hz - 200 MHz
Level control range:	from Peak- to Peak+
<b>Normal (without peak):</b>	
Slope/Video:	
Min. signal height:	5 mm
Frequency range:	0 - 200 MHz
Level control range:	-10 cm to +10 cm
<b>Operating modes:</b>	
Slope/Video:	
Slope:	positive, negative, both
Sources:	CH 1, CH 2, alt. CH 1/2 (≥ 8 mm), Line, Ext.
<b>Coupling:</b>	
AC:	10 Hz-200 MHz
DC:	0-200 MHz
HF:	30 kHz-200 MHz
LF:	0-5 kHz
	Noise Rej. switchable
<b>Video:</b>	
pos./neg. Sync. Impulse	
<b>Standards:</b>	
525 Line/60 Hz Systems	
625 Line/50 Hz Systems	
<b>Field:</b>	
even/odd/both	
<b>Line:</b>	
all/line number selectable	
<b>Source:</b>	
CH 1, CH 2, Ext.	
<b>Indicator for trigger action:</b>	
LED	
<b>External Trigger via:</b>	
Auxiliary Input (0.3 V <sub>pp</sub> , 100 MHz)	
<b>Coupling:</b>	
AC, DC	
<b>Max. input voltage:</b>	
100 V (DC +peak AC)	
<b>Digital mode</b>	
<b>Pre/Post Trigger:</b>	
-100 % to +400 % related to complete memory	
<b>Analog mode</b>	
<b>2nd Trigger</b>	
Min. signal height:	5 mm
Frequency range:	0 - 200 MHz
Coupling:	DC
Level control range:	-10 cm to +10 cm

## Horizontal Deflection

<b>Analog mode</b>	
<b>Operating modes:</b>	
A, ALT (alternating A/B), B	
<b>Time base A:</b>	
0.5 s/cm - 50 ns/cm (1-2-5 sequence)	
<b>Time base B:</b>	
20 ms/cm - 50 ns/cm (1-2-5 sequence)	
<b>Accuracy A and B:</b>	
± 3 %	
<b>X Magnification x10:</b>	
to 5 ns/cm	
<b>Accuracy:</b>	
± 5 %	
<b>Variable time base A/B:</b>	
cont. 1:2.5	
<b>Hold Off time:</b>	
var. 1:10 (LED-Indication)	
<b>Bandwidth X-Amplifier:</b>	
0 - 3 MHz (-3 dB)	
<b>X Y phase shift &lt; 3°:</b>	
< 220 kHz	
<b>Digital mode</b>	
<b>Time base range</b>	
<b>Refresh Mode:</b>	
20 ms/cm - 5 ns/cm (1-2-5 sequence)	

<b>with Peak Detect:</b>	20 ms/cm - 50 ns/cm (1-2-5 sequence)
<b>Roll Mode:</b>	50 s/cm - 50 ms/cm (1-2-5 sequence)
<b>Accuracy time base</b>	
<b>Time base:</b>	50 ppm
<b>Display:</b>	± 1 %
<b>MEMORY ZOOM:</b>	max. 40,000:1
<b>Bandwidth X-Amplifier:</b>	0 - 100 MHz (-3 dB)
<b>X Y phase shift &lt; 3°:</b>	< 100 MHz

## Digital Storage

<b>Acquisition (real time):</b>	2x 500 MSa/s, 1 GSa/s interleaved
<b>Acquisition (random sampling):</b>	10 GSa/s
<b>Bandwidth:</b>	2 x 0 - 100 MHz (random)
<b>Memory:</b>	1 M-Samples per channel
<b>Operating modes:</b>	
Refresh, Average, Envelope/	
Roll: Free Run/Triggered, Peak-Detect	
<b>Resolution (vertical):</b>	
<b>Resolution (horizontal):</b>	
<b>Yt:</b>	11 Bit (200 Pts/cm)
<b>XY:</b>	8 Bit (25 Pts/cm)
<b>Interpolation:</b>	
Sin <sup>x</sup> /x, Dot Join (linear)	
<b>Delay:</b>	
1 Million * 1/Sampling Rate to	
4 Million * 1/Sampling Rate	
<b>Display refresh rate:</b>	
max. 170/s at 1 MPts	
<b>Display:</b>	
Dots (acquired points only), Vectors (partly	
interpolated), optimal (complete memory	
weighting and vectors)	
<b>Reference Memories:</b>	
9 with 2 kPts each (for recorded signals)	
<b>Display:</b>	
2 signals of 9 (free selectable)	

## Operation/Measuring/Interfaces

<b>Operation:</b>	
Menu (multilingual), Autoset, help	
functions (multilingual)	
<b>Save/Recall (instrument parameter settings):</b>	
9	
<b>Signal display:</b>	
max. 4 traces	
<b>analog:</b>	
CH 1, 2 (Time Base A) in combination with	
CH 1, 2 (Time Base B)	
<b>digital:</b>	
CH1,2 and ZOOM or Reference or	
Mathematics)	
<b>Frequency counter:</b>	
6 digit resolution:	>1 MHz - 200 MHz
5 digit resolution:	0.5 Hz - 1 MHz
<b>Accuracy:</b>	50 ppm
<b>Auto Measurements:</b>	
<b>Analog mode:</b>	Frequency, Period, Vdc, Vpp, Vp+, Vp-
<b>also in digital mode:</b>	V <sub>rms</sub> , V <sub>avg</sub>
<b>Cursor Measurements:</b>	
<b>Analog mode:</b>	ΔV, Δt, 1/Δt (f), V to GND, ratio X, ratio Y
<b>also in digital mode:</b>	Pulse count, Vt to Trigger, Peak to Peak, Peak+, Peak-
<b>Resolution Readout/Cursor:</b>	
1000 x 2000 Pts, Signals: 250 x 2000	
<b>Interfaces (plug-in):</b>	
RS-232 (HO710)	
<b>Optional:</b>	
IEEE-488, Ethernet, Dual-Interface	
RS-232/USB	

## Mathematic functions

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

## Display

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

## General Information

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

**Accessories supplied:** Line cord, Operating manual, 2 Probes 10:1 with attenuation ID, Windows Software for control and data transfer  
**Optional accessories:** Dual-Interface RS-232/USB HO720, Ethernet HO730 IEEE-488 (GPIB) HO740, Opto-Interface (with optical fiber cable) HZ70