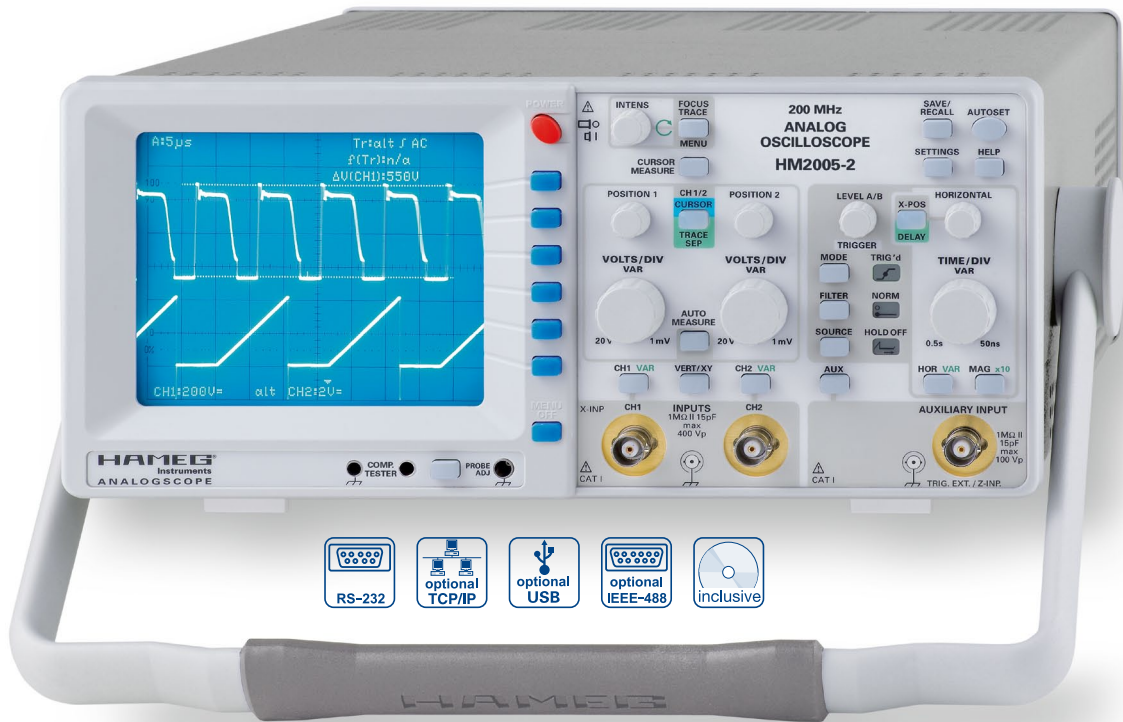
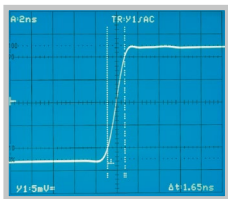


150MHz Analog Oscilloscope HM1500-2

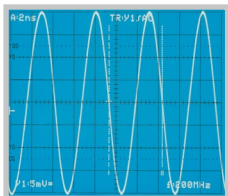
HM2005-2



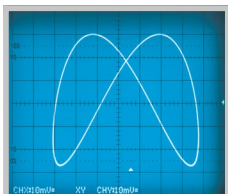
Even fast rising Edges do not cause Overshoot



Excellent dynamic Range Characteristics demonstrated with a 200MHz Signal



Lissajous Figure (XY Mode)



- 2 Channels with Deflection Coefficients 1mV/div....20V/div.
- 2 Time Bases: 5ns/div....0.5s/div. and 5ns/div....20ms/div.
- Low Noise Measuring Amplifiers with high Pulse Fidelity
- Videotrigger: odd and even Frames, Line Selection (525/60 and 625/50 Standard)
- 200MHz 6-Digit Frequency Counter, Cursor and automatic Measurement
- 14kV high writing Speed CRT, Readout, Autoset, Delay Line, no Fan
- Save/Recall Memories for Instrument Settings
- Help Function, Multilingual Menu
- RS-232 Interface (for Parameter Queries and Control only)

150 MHz Analog Oscilloscope HM1500-2

All data valid at 23 °C after 30 minutes warm-up.

Vertical Deflection

Channels:	2
Operating Modes:	CH 1 or CH 2 separate, DUAL (CH 1 and CH 2 alternate or chopped), Addition
XY-Mode:	CH 1
Invert:	CH 1, CH 2
Bandwidth [-3 dB]:	2 x 0...150 MHz
Rise time:	<2.3 ns
Bandwidth limiting (selectable):	approx. 20 MHz (5 mV/div...20 V/div.)
Deflection Coefficients (CH 1, 2):	14 calibrated steps
1...2 mV/div.:	±5% (0...10 MHz [-3 dB])
5 mV...20 V/div.:	±3% (1-2-5 sequence)
variable (uncalibrated)	>2.5:1 to >50 V/div.
Inputs CH 1, 2:	
Input Impedance:	1 MΩ 15 pF
Coupling:	DC, AC, GND (ground)
Max. Input Voltage:	400 V (DC + peak AC)
Y Delay Line:	70 ns
Measuring Circuits:	Measuring Category I
Auxiliary input:	
Function (selectable):	Extern Trigger, Z (unblank)
Coupling:	AC, DC
Max. input voltage:	100 V (DC + peak AC)

Triggering

Automatic (Peak to Peak):	
Min. signal height:	5 mm
Frequency range:	10 Hz...250 MHz
Level control range:	from Peak- to Peak+
Normal (without peak)	
Min. signal height:	5 mm
Frequency range:	0...250 MHz
Level control range:	-10...+10 div.
Operating modes:	Slope/Video
Slope:	Rising, falling, both
Sources:	CH 1, CH 2, alt. CH 1/2 (≥8 mm), Line, Ext.
Coupling:	AC: 10 Hz...250 MHz DC: 0...250 MHz HF: 30 kHz...250 MHz LF: 0...5 kHz Noise Rej. switchable
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 (0.3 V _{pp} , 150 MHz)
Coupling:	AC, DC
Max. input voltage:	100 V (DC + peak AC)
2nd Trigger	
Min. signal height:	5 mm
Frequency range:	0...250 MHz
Coupling:	DC
Level control range:	-10...+10 div.

Horizontal Deflection

Operating modes:	A, ALT (alternating A/B), B
Time base A:	50 ns/div...0.5 s/div. (1-2-5 sequence)
Time base B:	50 ns/div...20 ms/div. (1-2-5 sequence)
Accuracy A and B:	±3%
X Magnification x10:	to 5 ns/div.
Accuracy:	±5%
Variable time base A/B:	1:2.5
Hold Off time:	var. 1:10 LED-Indication
Bandwidth X-Amplifier:	0...3 MHz [-3 dB]
XY phase shift <3°:	<220 kHz

Operation/Measuring/Interfaces

Operation:	Autoset, Menu and help functions (multilingual)
Save/Recall (instrument parameter settings):	9
Signal display:	max. 4 traces CH 1, 2 (Time Base A) in combination with CH 1, 2 (Time Base B)
Frequency counter:	
6 digit resolution:	1...250 MHz
5 digit resolution:	0.5 Hz...1 MHz
Accuracy:	50 ppm
Auto Measurements:	Frequency, Period, V _{dc} , V _{pp} , V _{p+} , V _{p-}
Cursor Measurements:	Δt, 1/Δt (f), tr, ΔV, V to GND, ratio X, ratio Y
Resolution Readout/Cursor:	1000 x 2000 Pts
Interfaces:	RS-232 (Device control and Parameter query, no CRT content transfer possible)
Optional:	Dual-Interface USB/RS232, IEEE-488 (GBIP) Dual-Interface Ethernet/USB

Display

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

General Information

Component tester:	
Test voltage:	approx. 7 V _{rms} (open circuit), approx. 50 Hz
Test current:	max. 7 mA _{rms} (short circuit)
Reference Potential:	Ground (safety earth)
Probe ADJ Output:	1 kHz/1 MHz square wave signal 0.2 V _{pp} (tr <4 ns)
Trace rotation:	electronic
Line voltage:	105...253 V, 50/60 Hz ±10%, CAT II
Power consumption:	37 Watt at 230 V, 50 Hz
Protective system:	Safety class I (EN61010-1)
Operating temperature:	+5...+40 °C
Storage temperature:	-20...+70 °C
Rel. humidity:	5...80% (non condensing)
Dimensions (W x H x D):	285 x 125 x 380 mm
Weight:	5.6 kg

Accessories supplied: Line cord, Operating manual, 2 Probes 10:1 with attenuation ID (HZ200)

Recommended accessories:

H0730	Dual-Interface Ethernet/USB
H0740	Interface IEEE-488 (GPIB)
HZ13	Interface cable (USB) 1.8 m
HZ14	Interface cable (serial) 1:1
HZ20	Adapter, BNC to 4 mm banana
HZ33	Test cable 50 Ω, BNC/BNC, 0.5 m
HZ34	Test cable 50 Ω, BNC/BNC, 1 m
HZ45	19"-Rackmount Kit 4RU
HZ51	Probe 10:1 (150 MHz)
HZ52	Probe 10:1 RF (250 MHz)
HZ53	Probe 100:1 (100 MHz)
HZ72	GPIB-Cable 2 m
HZ100	Differential probe 20:1/200:1
HZ109	Differential probe 1:1/10:1
HZ115	Differential probe 100:1/1000:1
HZ154	Standard probe 1:1/10:1
HZ350	Probe 10:1 with automatically identification (350 MHz)
HZ355	Slimline probe 10:1 with automatically identification (500 MHz)
HZ020	High voltage probe 1000:1 (400 MHz, 1000 V _{rms})
HZ030	Active probe 1 GHz (0.9 pF, 1 MΩ, including many accessories)
HZ050	AC/DC Current probe 20 A, DC...100 kHz
HZ051	AC/DC Current probe 1000 A, DC...20 kHz