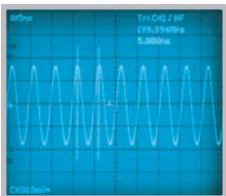


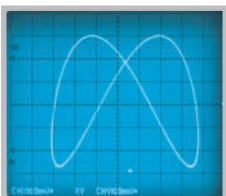
150 MHz Analog Oscilloscope HM1500



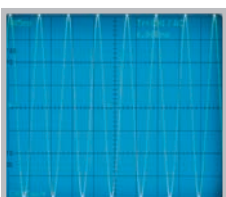
199.994 MHz Sine Wave
Signal, measured with
internal frequency counter.



Lissajous Figure (XY Mode)



Excellent dynamic range
characteristics demonstra-
ted with a 150 MHz signal



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



150 MHz Analog Oscilloscope HM1500

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

Vertical Deflection

Channels:	2
Operating Modes:	CH 1 or CH 2 separate, DUAL (CH 1 and CH 2 alternate or chopped), Addition
X in XY-Mode:	CH 1
Invert:	CH 1, CH 2
Bandwidth (-3dB):	2 x 0 - 150 MHz
Rise time:	< 2.3 ns
Overshoot:	max. 1 %
Deflection Coefficients (CH 1, 2):	14 calibrated steps
1 mV - 2 mV/cm:	± 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
Inputs CH 1, 2:	
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 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-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 cm to +10 cm

Horizontal Deflection

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 X x10:	± 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)
XY phase shift < 3°:	< 220 kHz

Operation/Measuring/Interfaces

Operation:	Menu (multilingual), Autoset, 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:	max. 180/s
6 digit resolution:	>1 MHz - 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), t _r , ΔV, V to GND, ratio X, ratio Y
Resolution Readout/Cursor:	1000 x 2000 Pts
Interfaces (plug-in):	RS-232 (HO710), Ethernet,
Optional:	Dual-Interface RS232/USB

Display

CRT:	D14-375GH
Display area (with graticule):	8 cm x 10 cm
Acceleration voltage:	ca. 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:	41 Watt at 230 V, 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

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

Optional accessories: Dual-Interface RS-232/USB HO720, Ethernet HO730, IEEE-488 (GPIB) HO740, Opto-Interface (with optical fiber cable) HZ70