

50MHz Analog- Digital-Oscilloscope HM507

Specifications

Vertical Deflection (analog/digital)

Operating modes: Channel I or CH II separate, CH I and II alternate or chopped (0.5MHz), Sum or difference from CH I and \pm CH II
XY-Mode: via CH I (X) and CH II (Y)
Frequency range: 2x DC - 50MHz (-3dB)
Rise time, Overshoot: <7ns, \leq 1%
Deflection coefficient: 14 calibrated steps (1-2-5 sequence)
1mV-2mV/div: \pm 5% (DC to 10MHz (-3dB))
5mV-20V/div: \pm 3% (DC to 50MHz (-3dB)) with variable >2.5:1(uncal.) to >50V/cm
Input impedance: 1 M Ω II 18pF
Input coupling: DC-AC-GD (ground)
Input voltage: max. 400V (DC + peak AC)
Triggering (analog/digital)
Automatic (peak to peak): \geq 0.5div, 20Hz - 100MHz
Normal with level control: \geq 0.5div, 0 - 100MHz
Indicator for trigger action: LED
Slope: positive or negative
Sources: CH I or II, alternate CH I and CH II (\geq 0.8div), line (mains) and external
Coupling: AC (10Hz - 100MHz), DC (0 - 100MHz), HF (50kHz - 100MHz), LF (0 - 1,5kHz)
2nd Triggering (analog mode): normal with level control and slope selection
External: \geq 0,3Vpp (0 - 50MHz)
Active TV Sync Separator Field and Line, pos. and neg.

Horizontal Deflection

Analog

Time coefficients: 22 calibrated steps (1-2-5 sequence), 0.5s/div - 50ns/div (\pm 3%), with variable >2.5:1(uncal.) to >1,25s/div
X-MAG. x10: up to 10ns/div. (\pm 5%)
Delay: 140ms - 200ns (variable)
Holdoff time: variable to approx. 10:1
Bandwidth X-Amplifier: 0 - 3MHz (-3dB)
X-Y phase shift: <3° below 120kHz

Digital

Time coefficients: 100s/div - 50ns/div (\pm 2%), 29 cal. steps (1-2-5 sequence)
X-MAG. x10: up to 20ns/div. (\pm 2%)
Bandwidth X-Amplifier: 0 - 20MHz (-3dB)
X-Y phase shift: <3° below 20MHz
Digital Storage
Operating modes: Refresh, Roll, Single, XY, Envelope, Average, Random-Sampling
Dot Join function: automatic
Max. sample rate, real time: 100MSa/s, 8 bit flash A/D
Max. effective sample rate, random: 2GSa/s
Pre-/Post-Trigger: -75% +100% (continuously)
Signal refresh rate: max. 180/s
Memory & display: 2k x 8bit per channel
Reference memory (EEPROM): 2k x 8 bit per channel
Resolution (samples/div) in Yt mode: X = 200/div, Y = 25/div
Resolution (samples/div) in XY mode: X = 25/div, Y = 25/div

Operation / Display

Manual / Autoset: front panel switches / autom. parameter selection
Save/Recall: 9 user defined instrument settings
Readout: display of instrument settings and measuring results
auto measurement: frequency/cycle, Vdc, Vpp, Vp+, Vp-,
Cursor measurement (analog, digital): Δ V, Δ t or 1/ Δ t (frequ.), gain, rise time, ratio X, ratio Y, V to GND, phase angle
Cursor measurement (digital): pulse count, search (peak - peak, peak+, peak-), mean value (avm), effective value (rms)
Frequency counter: 4 digit (0,01% \pm 1 digit) 0.5Hz - 100MHz
Interface (standard fitting): RS-232 (for instrument control and signal data)
 Option: data transfer via glass fiber: **HZ70**; Interface: **HO79-6**

Component Tester

Test voltage, frequency: approx. 7Vrms (open circuit), approx. 50Hz
Test current: approx. 7mA rms (short circuit) One test lead is grounded (Safety Earth)

General Information

CRT: 8x10cm, internal graticule
Acceleration voltage: approx. 2kV
Z-input (Intens. modulation, analog): max. +5V (TTL)
Calibrator (square wave): 0.2V \pm 1%, \approx 1 Hz - 1 MHz (tr <4ns)
Line voltage: 100-240V AC \pm 10%, 50/60Hz
Power consumption: approx. 46 Watt at 50Hz
Min./Max. ambient temperature: 10°C...+40°C
Protective system: Safety class I (EN 61 010, IEC 1010-1)
Weight: ca. 6,0kg,
Color: techno-brown
Cabinet: W 285, H 125, D 380 mm



- 2GSa/s Random Sampling Rate
- 100MS/s Real Time Sampling Rate
- 2 Channels, DC-50MHz, 1mV-20V/div., Component Tester
- 100MHz Frequency & Period Counter 4 Digit Resolution
- 7 Automatic Measurement Routines, Built-in Calibrate Menu
- 9 Different Instrument Settings in Nonvolatile Memory
- Autoset, Readout, Cursor Measurement, Save/Recall, RS-232 Interface

The HM507 features **50MHz** bandwidth capability in analog and digital mode, which is unique in its price range. According to the measurement task, the user can select between the advantages of analog or digital by pressing one pushbutton. The **CRT display** with its **extremely high resolution**, offers unsurpassed signal display quality in combination with an unmatched display update rate.

In digital mode each signal can be **displayed with 2000 samples** (200 samples/div). The high X resolution also has the effect that, in comparison with LC and raster scan displays, the sampling rate in each comparable time base setting is significantly higher. This reduces the danger of alias signal display.

The ability to record even very low frequency signals down to **1mHz** and **single events**, together with **Pre or Post Trigger**, are examples of the advantages of digital mode.

Additionally in digital mode, signal processing (**average, envelope**) can be performed as well as signal documentation in combination with external devices (e.g. PC) via the built in **RS-232 interface**. A suitable software program is supplied with the scope.

In addition to real time sampling, random sampling is now available too; the latter function allows you to record **repetitive signals up to 50MHz**. The demands for a distortion free "probe tip to screen" signal display are met by the low noise, 8 bit **flash A/D converters**, avoiding noise problems typical for CCD and analog array converters. Two non volatile reference memories allow the comparison of signals with those already stored in memory.

Autoset significantly eases instrument operation; briefly pressing this button automatically optimises the instrument setting for almost any signal, and manual adjustments are only required for special cases (e.g. complex signals). **Save/Recall** allows you to store and recall 9 different instrument settings in a non volatile memory. Front panel settings and selected features are alphanumerically displayed on the screen (Readout). For example the results of cursor independent automatic measurement of **frequency, period, dc- or ac voltages, Voltage, time, frequency, phase angle, gain, rise time, ratio X and ratio Y** can be determined by manual cursor measurement in analog and digital mode. In the latter mode cursor supported **rms and mean value measurement** as well as a count function are available too. Probe factor input (x1 and x10) enables the correct display of deflection coefficients and voltages, without annoying calculation. The built-in calibrate menu allows closed-case adjustment procedures of the vertical-, trigger- and storage amplifiers. In its class the **HM507** offers unique characteristics for measurement and documentation.

Accessories supplied: Operators Manual and PC Software on CD-ROM, 2 Probes 1:1/10:1 and Line Cord.