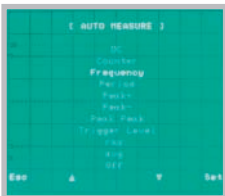


# 50 MHz Analog - / Digital Oscilloscope HM507

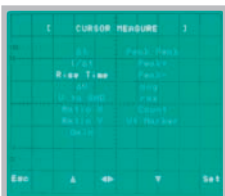


Specifications and functions, see HM504-2

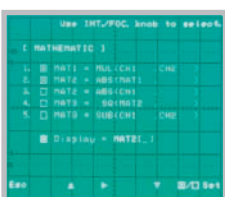
Automatic measurements



Cursor measurement



Signal processing with user-defined formulas



## Digital mode:

Single, Refresh, Envelope, Average, Roll and XY modes

Low-Noise 8-bit Flash A/D Converters with max. 100 MSa/s  
Real Time Sampling, 2 GSa/s Random Sampling and 2 kPts  
Memory per Channel

Pre-/Post-Trigger - 10 cm to +10 cm

Digital Time Base 100 s – 100 ns/cm, with X Magnification up  
to 20 ns/cm

Programmable Mathematical Signal Processing

RS-232 interface for control and signal data transfer, incl.  
Windows® software



## 50 MHz Analog/Digital Oscilloscope HM507

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

### Vertical Deflection

|                                 |  |
|---------------------------------|--|
| <b>Operating Modes:</b>         | Channel I or II only<br>Channels I and II (alternate or chopped)<br>Sum or Difference of CH I and CH II  |
| <b>Invert:</b>                  | CH II  |
| <b>XY Mode:</b>                 | via CH I (X) and CH II (Y)   |
| <b>Bandwidth:</b>               | 2 x 0 – 50 MHz (-3 dB)   |
| <b>Rise Time:</b>               | < 7 ns   |
| <b>Overshoot:</b>               | max. 1 %   |
| <b>Deflection Coefficients:</b> | 1-2-5 Sequence<br>1 mV/div. – 2 mV/div.: ± 5 % (0 to 10 MHz (-3 dB))<br>5 mV/div. – 20 V/div.: ± 3 % (0 to 50 MHz (-3 dB))<br>Variable (uncalibrated): > 2.5: 1 to > 50 V/div. |
| <b>Input Impedance:</b>         | 1 MΩ    18 pF  |
| <b>Coupling:</b>                | DC, AC, GND (ground)   |
| <b>Max. Input Voltage:</b>      | 400 V (DC + peak AC)   |

### Triggering

|                                   |  |
|-----------------------------------|--|
| <b>Automatic (Peak to Peak):</b>  | 20 Hz – 100 MHz (≥ 5 mm)   |
| <b>Normal with Level Control:</b> | 0 – 100 MHz (≥ 5 mm)   |
| <b>Slope:</b>                     | positive or negative   |
| <b>Sources:</b>                   | Channel I or II, CH I/CH II alternate (≥ 8 mm)<br>Line and External                |
| <b>Coupling:</b>                  | AC (10 Hz – 100 MHz), DC (0 – 100 MHz),<br>HF (50 kHz – 100 MHz), LF (0 – 1.5 kHz) |
| <b>Trigger Indicator:</b>         | with LED   |
| <b>Triggering after Delay:</b>    | with Level Control and Slope selection   |
| <b>External Trigger Signal:</b>   | ≥ 0.3 V <sub>PP</sub> (0 – 50 MHz)   |
| <b>Active TV sync. separator:</b> | Field and Line, +/-  |

### Horizontalablenkung (analog u. digital)

|                                 |   |
|---------------------------------|---|
| <b>Analog</b>                   |   |
| <b>Time Base:</b>               | 0.5 s/div. – 50 ns/div. (1-2-5 Sequence)  |
| <b>Accuracy:</b>                | ± 3 %                                     |
| <b>Variable (uncalibrated):</b> | > 2.5: 1 to > 1.25 s/div.                 |
| <b>X-Magnification x 10:</b>    | up to 10 ns/div. (± 5 %)                  |
| <b>Accuracy:</b>                | ± 5 %                                     |
| <b>Delay (selectable):</b>      | 140 ms – 200 ns (variable)                |
| <b>Hold-Off Time:</b>           | variable to approx. 10 : 1                |
| <b>XY Mode</b>                  |   |
| <b>Bandwidth X amplifier:</b>   | 0 – 3 MHz (-3 dB)                         |
| <b>XY Phase shift &lt; 3°:</b>  | < 120 kHz                                 |
| <b>Digital</b>                  |   |
| <b>Time Base:</b>               | 100 s/div. – 100 ns/div. (1-2-5 Sequence) |
| <b>Accuracy:</b>                | ± 2 %                                     |
| <b>X Magnification x 10:</b>    | up to 20 ns/div.                          |
| <b>Accuracy:</b>                | ± 2 %                                     |
| <b>XY Mode</b>                  |   |
| <b>Bandwidth X Amplifier :</b>  | 0 - 50 MHz (-3 dB)                        |
| <b>XY Phase shift &lt; 3°:</b>  | < 10 MHz                                  |

### Digital Storage

|                                   |  |
|-----------------------------------|--|
| <b>Operating Modes:</b>           | Refresh, Roll, Single, XY, Envelope,<br>Average, Random Sampling |
| <b>Interpolation:</b>             | Linear Dot Join Function   |
| <b>Sampling Rate (Real Time):</b> | max 100 MSa/s, 8 bit Flash A/D Converter                         |
| <b>Sampling Rate (Random):</b>    | 2 GSa/s relative   |

|  |                                    |
|--|------------------------------------|
| <b>Post/Pre-Trigger:</b>               | -10 div. to + 10 div. (continuous) |
| <b>Display Refresh Rate:</b>           | max. 180/s                         |
| <b>Bandwidth:</b>                      | 2 x 0 – 50 MHz (-3 dB)             |
| <b>Rise Time, Overshoot:</b>           | < 7 ns, ≤ 1 %                      |
| <b>Signal Memory:</b>                  | 3 x 2 k x 8 bit                    |
| <b>Reference Signal Memory:</b>        | 3 x 2 k x 8 bit                    |
| <b>Mathematical Signal Memory:</b>     | 3 x 2 k x 8 bit                    |
| <b>Resolution (dots/div.) Yt Mode:</b> | X: 200/div., Y: 25/div.            |
| <b>Resolution (dots/div.) XY Mode:</b> | X: 25/div., Y: 25/div.             |

### Operation / Readout / Control

|                                      |  |
|--------------------------------------|--|
| <b>Manual:</b>                       | via controls   |
| <b>Autoset:</b>                      | automatic signal related parameter settings  |
| <b>Save and Recall:</b>              | 9 user defined parameter settings  |
| <b>Readout:</b>                      | display of menu, parameters, cursors<br>and results  |
| <b>Auto Measurements:</b>            |  |
| <b>  Analog mode:</b>                | Frequency, Period, V <sub>DC</sub> , V <sub>pp</sub> , V <sub>p+</sub> , V <sub>p-</sub> , |
| <b>  also in digital mode:</b>       | V <sub>rms</sub> , V <sub>average</sub>  |
| <b>Cursor Measurements:</b>          |  |
| <b>  Analog mode:</b>                | ΔV, Δt, 1/Δt (f), tr, ΔV, V to GND, ratio X and Y  |
| <b>  also in digital mode:</b>       | Pulse count, Vt related to Trigger Point,<br>Peak to Peak, Peak+, Peak-                    |
| <b>Frequency counter:</b>            | 4 digit (0.01 % ± 1 digit) 0.5 Hz – 100 MHz  |
| <b>Interface (standard fitting):</b> | RS-232 (Control, Signal Data)  |
| <b>Interface Option:</b>             | H079-6 (IEEE-488, RS-232, Centronics)  |

### Component Tester

|                         |   |
|-------------------------|---|
| <b>Test Voltage:</b>    | approx. 7 V <sub>rms</sub> (open circuit) |
| <b>Test Current:</b>    | max. 7 mA <sub>rms</sub> (short-circuit)  |
| <b>Test Frequency:</b>  | approx. 50 Hz                             |
| <b>Test Connection:</b> | 2 banana jacks 4 mm Ø                     |

One test circuit lead is grounded via protective earth (PE)

### Miscellaneous

|  |  |
|--|--|
| <b>CRT:</b>                                  | D14-363GY, 8 x 10 cm with internal graticule |
| <b>Acceleration Voltage:</b>                 | approx. 2 kV                                 |
| <b>Trace Rotation:</b>                       | adjustable on front panel                    |
| <b>Z-Input (Intens. modulation, analog):</b> | max. + 5V (TTL)                              |
| <b>Calibrator Signal (Square Wave):</b>      | 0.2 V ± 1 %, 1 Hz - 1 MHz (tr < 4 ns), DC    |
| <b>Power Supply (Mains):</b>                 | 105-253 V, 50/60 Hz ± 10 %, CAT II           |
| <b>Power Consumption:</b>                    | approx. 42 Watt at 230 V/50 Hz               |
| <b>Min./max. Ambient temperature:</b>        | 0° C...+40° C                                |
| <b>Safety class:</b>                         | Safety class I (EN61010-1)                   |
| <b>Weight:</b>                               | approx. 6.0 kg                               |
| <b>Dimensions (W x H x D):</b>               | 285 x 125 x 380 mm                           |

**Accessories supplied:** Line Cord, Operators Manual and Software for Windows on CD-ROM, 2 Probes 1:1 / 10:1

**Optional accessories:** Multifunction Interface H079-6, Opto Interface (with optical fiber cable) HZ70

www.hameg.com