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Test & Measurement

- sales
- rentals
- calibration
- repair
- disposal

Complimentary Reference Material

This PDF has been made available as a complimentary service for you to assist in evaluating this model for your testing requirements.

TMG offers a wide range of test equipment solutions, from renting short to long term, buying refurbished and purchasing new. Financing options, such as Financial Rental, and Leasing are also available on application.

TMG will assist if you are unsure whether this model will suit your requirements.

Call TMG if you need to organise repair and/or calibrate your unit.

If you click on the "Click-to-Call" logo below, you can all us for FREE!

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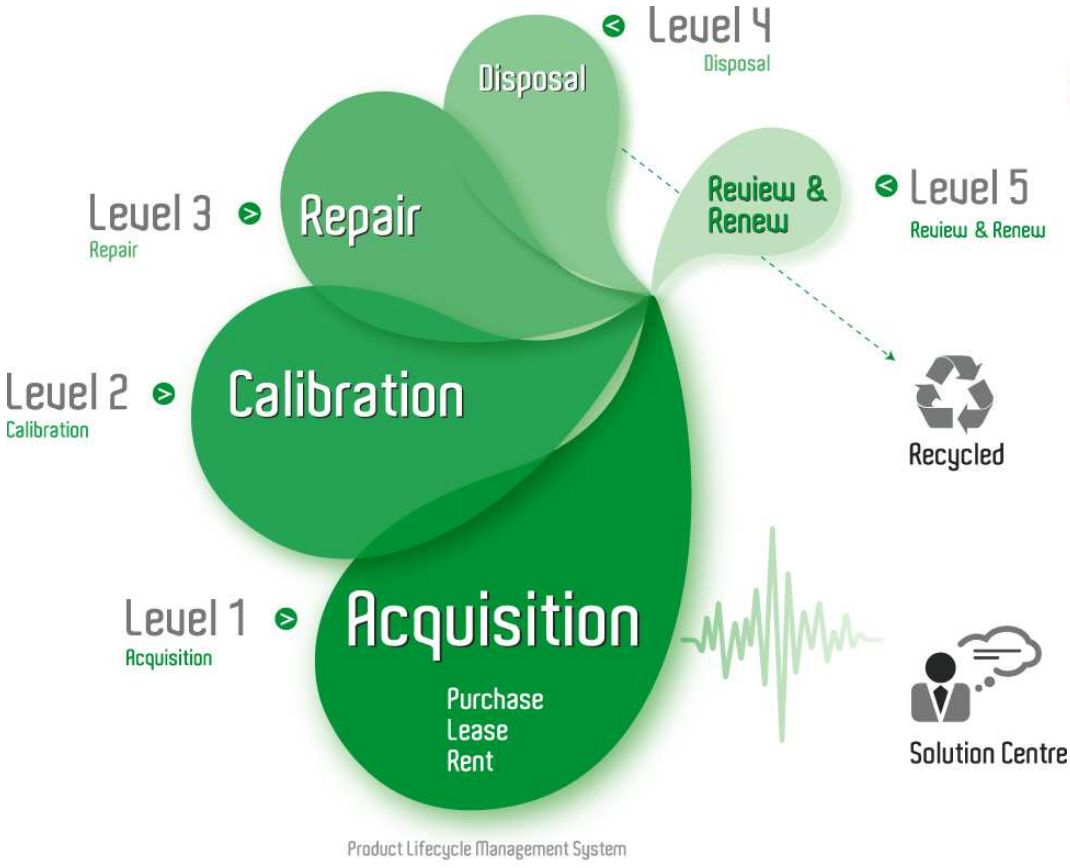


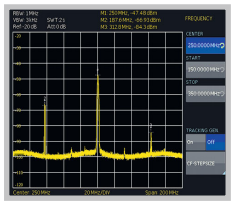
HAMEG Instruments

1GHz Spectrum Analyzer
HMS1000/HMS1010

HMS1010

Carrying Case HZ99

Comfortable automatic measurement functions with up to 8 markers



Ethernet/USB-interface HO730 for industrial use (Option)

- ☑ Frequency range 100kHz...1GHz
- ☑ Amplitude measurement range -114...+20dBm
  DANL -125dBm with Preamp. Option HO3011
- ☑ Sweep time 20ms...1000s
- ☑ Resolution bandwidth (RBW) 1kHz...1MHz in 1–3 steps,
  200kHz (-3dB) additional 9kHz, 120kHz, 1MHz (-6dB)
- ☑ Spectral purity ‹-100dBc/Hz (@100kHz)
- ☑ Video bandwidth (VBW) 10Hz...1MHz in 1–3 steps
- ☑ Tracking Generator (HMS1010) -20dBm/0dBm
- ☑ Integrated AM and FM demodulator (int. speaker)
- ☑ Detectors: Auto-, min-, max-peak, sample, RMS, quasi-peak
- ☑ 8 Marker with delta marker, miscellaneous peak functions
- ☑ Crisp 16.5cm (6.5") TFT VGA display, DVI output
- ☑ 3xUSB for mass-storage, printer and remote control
  optional IEEE-488 (GPIB) or Ethernet/USB Interface

1GHz Spectrum Analyzer HMS1000, HMS1010 (with TG)
3GHz Spectrum Analyzer HMS3000, HMS3010 (with TG)

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

Frequency

Frequency range:	
HMS1000, HMS1010	100kHz...1GHz
HMS3000, HMS3010	100kHz...3GHz
Temperature stability:	± 2ppm (0...30°C)
Aging:	± 1ppm/year
Frequency counter (from SW 2.0)**:**	
Resolution	1Hz
Accuracy	± (Frequency x tolerance of reference)
Span setting range:	
HMS1000, HMS1010	0Hz (zero span) and 1kHz...1GHz
HMS3000, HMS3010	0Hz (zero span) and 100Hz...3GHz
Spectral purity, SSB phase noise:	
30kHz from carrier (500MHz, +20...30°C)	‹ -85dBc/Hz
100kHz from carrier (500MHz, +20...30°C)	‹ -100dBc/Hz
1MHz from carrier (500MHz, +20...30°C)	‹ -120dBc/Hz
Sweep time:	
Span = 0Hz	20ms...100s
Span › 0Hz	20ms...1000s, min. 20ms/600MHz
Resolution bandwidths (-3dB)**:**	
HMS1000, HMS1010	1kHz...1MHz in 1–3 steps, 200kHz
HMS3000, HMS3010	100Hz...1MHz in 1–3 steps, 200kHz
Tolerance:	
≤ 300kHz	± 5% typ.
1MHz	± 10% typ.
Resolution bandwidths (-6dB)**:**	
HMS1000, HMS1010	9kHz, 120kHz,1MHz
HMS3000, HMS3010	200Hz, 9kHz, 120kHz, 1MHz
Video bandwidths:	10Hz...1MHz in 1–3 steps

Amplitude

Display range:	Average noise level displayed up to +20dBm
Amplitude measurement range:	Typ. -114...+20dBm
Max. permissible DC at HF input:	80V
Max. power at HF input:	20dBm, 30dBm for max. 3 Min.
Intermodulation free range:	
IM3 products, 2 x –20dBm (-10dBm ref. level)	66dB typ. (typ. +13dBm third-order intercept)
(at distance between signals ≤ 2MHz)	60dB typ. (+10dBm TOI)
(at distance between signals ›2MHz)	66dB typ. (typ. +13dBm TOI)
DANL (Displayed average noise level):	
(RBW 1kHz, VBW 10Hz, ref. level ≤ –30dBm 10MHz...1GHz resp. 3GHz)	-105dBm, typ. -114dBm
With Preamp.	-135dBm typ. (100Hz RBW)
Inherent spurious:	
(ref. level ≤ -20dBm, f ‹ 30MHz, RBW ≤ 100kHz)	‹ -80dBm
Input related spurious:	
(Mixer level ≤ -40dBm, carrier offset › 1MHz)	-70dBc typ., -55dBc (2...3GHz)
2nd harmonic receive frequency	
(mixer level -40dBm):	-60dBc typ.
Level display:	
Reference level	-80...+20dBm in 1dB steps
Display range	100dB, 50dB, 20dB, 10dB, linear
Logarithmic display scaling	dBm, dBµV, dBmV
Linear display scaling	µV, mV, V, nW, µW, mW, W
Measured curves:	1 curve and 1 memory curve
Trace mathematics:	A-B (curve-stored curve), B-A
Detectors:	Auto-, Min-, Max-Peak, Sample, RMS, Average, Quasi-Peak
Failure of level display: (ref. level to ref. level-50dB, 20...30°C)	‹ 1,5dB, typ. 0,5dB

Marker/Deltamarker

Number of marker:	8
Marker functions:	Peak, next peak, minimum, center = marker, frequency, reference level = marker level, all marker on peak
Marker displays:	Normal (level), noise marker, (frequency) counter (from SW 2.0)

Inputs/Outputs

HF Input	N socket
Input Impedance:	50Ω
VSWR (10MHz...1GHz/3GHz)**:**	‹ 1,5 typ.
Output tracking generator:	
(HMS1010/HMS3010)	N socket
Output Impedance:	50Ω
Frequency range:	5MHz...1GHz/3GHz
Output level:	-20dBm/0dBm
Trigger and external reference input:	BNC female, selectable
Trigger voltage	TTL
Reference frequency	10MHz
Essential level (50Ω)	10dBm
Supply output for field probes:	6VDC, max. 100mA (2,5mm DIN jack)
Audio output (Phone):	3,5mm DIN jack
Demodulation	AM and FM (internal speaker)

Miscellaneous

Display:	16.5cm (6,5") TFT Color VGA Display
Save/Recall memory:	10 complete device settings
Trigger:	Free run, Video Trigger (from SW 2.0), external Trigger
Interfaces:	Dual-Interface USB/RS-232 (HO720), USB-Stick (frontside), USB-Printer (rear side) from SW 2.0, DVI-D for ext. monitor
Power supply:	105...253V, 50/60Hz, CAT II
Power consumption:	Max. 40 Watt at 230V, 50Hz
Protection class:	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 175 x 220mm
Weight:	3.6kg

Accessories supplied: Line cord, Operating manual, Dual-Interface USB/RS-232 (HO720), CD, HZ21 Adapter plug,N plug to BNC socket (2x HMS1010/3010)

Optional accessories:

HO730	Dual-Interface Ethernet/USB
HO740	Interface IEEE-488 (GPIB), galvanically isolated
HO3011	Preamplifier -135dBm DANL (100Hz RBW)
HZ13	Interface cable (USB) 1,8m
HZ14	Interface cable (serial) 1:1
HZ20	Adapter, BNC to 4mm banana
HZ33	Test cable 50Ω, BNC/BNC, 0,5m
HZ34	Test cable 50Ω, BNC/BNC, 1m
HZ46	4RU 19'' Rackmount Kit
HZ70	Optical interface RS-232 (incl. fibre optic cable)
HZ72	GPIB-Cable 2m
HZ99	Carrying Case for protection and transport
HZ547	3GHz VSWR Test Unit for HMS1010, HMS3010
HZ520	Plug-in Antenna with BNC connection
HZ525	50Ω-Termination, N plug
HZ530	Near-Field Probe Set 1GHz for EMV diagnostics
HZ540/550	Near-Field Probe Set 3GHz for EMV diagnostics
HZ540L/550L	Near-Field Probe Set 3GHz for EMV diagnostics
HZ547	3GHz VSWR Bridge for HMS1010, HMS3010
HZ560	Transient limiter
HZ575	75/50Ω Converter
HZO30	active probe 1GHz (0,9pF, 1MΩ, including many accessories)

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