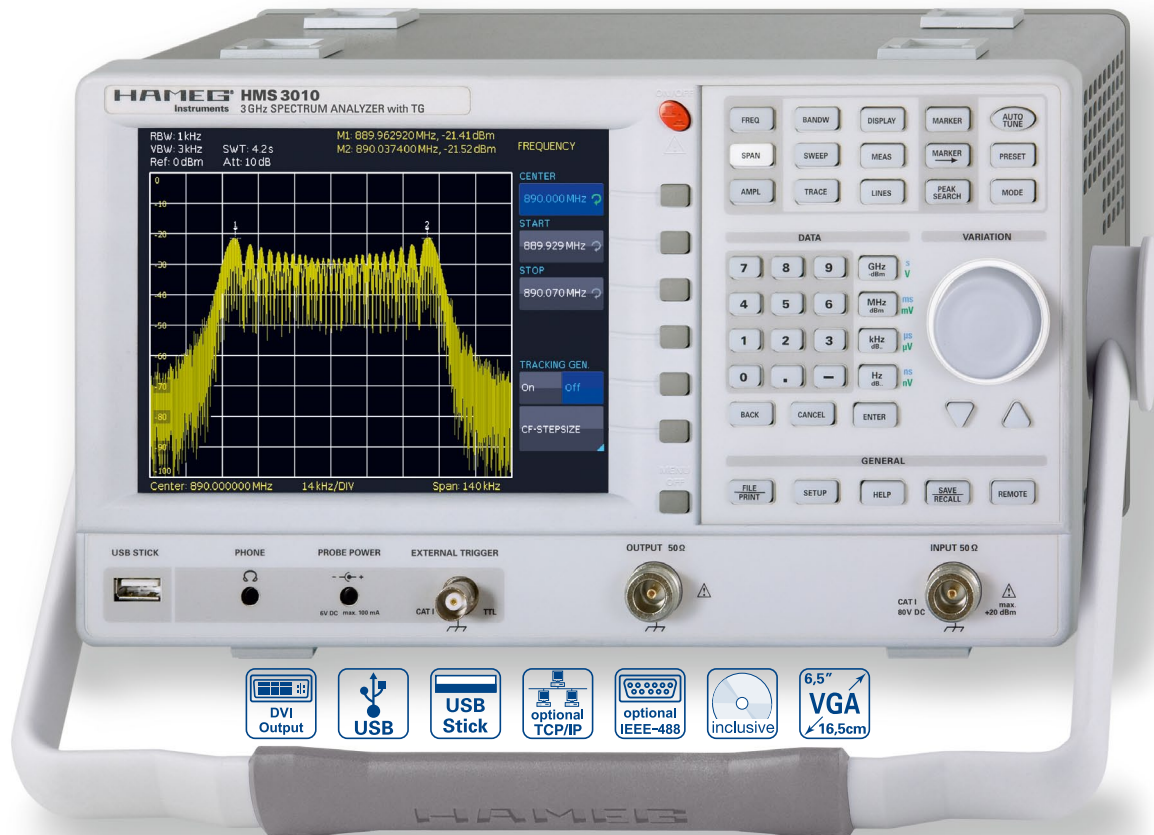


3GHz Spectrum Analyzer HMS3000 / HMS3010

HMS3010



1GHz Spectrum Analyzer
HMS1000 without TG



3GHz EMI Near Field Probe
Set HZ550L



VSWR Test Unit HZ547



- ✓ Frequency Range 100kHz...3GHz
- ✓ Tracking Generator HMS3010 -20...0dBm
- ✓ Amplitude Measurement Range -114...+20dBm
DANL -135dBm with Preamp. Option H03011
- ✓ Sweep Time 20ms...1000s
- ✓ Resolution Bandwidth 100Hz...1MHz in 1-3 Steps,
200kHz (-3dB); additional 200Hz, 9kHz, 120kHz, 1MHz (-6dB)
- ✓ Spectral Purity <-100dBc/Hz (@100kHz)
- ✓ Video Bandwidth 10Hz...1MHz in 1-3 Steps
- ✓ Integrated AM and FM Demodulator (Phone and 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
- ✓ 3 x USB for Mass-Storage, Printer and Remote Control
optional IEEE-488 (GPIB) or Ethernet/USB Interface

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

Amplitude	
Display range:	Average noise level displayed up to +20 dBm
Amplitude measurement range:	Typ. -114...+20 dBm
Max. permissible DC at HF input:	80 V
Max. power at HF input:	20 dBm, 30 dBm for max. 3 Min.
Intermodulation free range:	
TOI products, 2x -20 dBm (-10 dBm ref. level) [at distance between signals ≤2 MHz]	66 dB typ. (typ. +13 dBm third-order intercept)
[at distance between signals >2 MHz]	60 dB typ. (+10 dBm TOI)
[at distance between signals >2 MHz]	66 dB typ. (typ. +13 dBm TOI)
DANL [Displayed average noise level]:	
(RBW 1 kHz, VBW 10 Hz, ref. level ≤-30 dBm)	
10 MHz...1 GHz resp. 3 GHz)	-105 dBm, typ. -114 dBm
With Preamp.	HMS1000/HMS1010: -125 dBm typ. (1 kHz RBW) HMS3000/HMS3010: -135 dBm typ. (100 Hz RBW)
Inherent spurious:	
(ref. level ≤-20 dBm, f >30 MHz, RBW ≤100 kHz)	< -80 dBm
Input related spurious:	
(Mixer level ≤-40 dBm, carrier offset >1 MHz)	-70 dBc typ., -55 dBc (2...3 GHz)
2 nd harmonic receive frequency	
(mixer level -40 dBm):	-60 dBc typ.
Level display:	
Reference level	-80...+20 dBm in 1 dB steps
Display range	100 dB, 50 dB, 20 dB, 10 dB, linear
Logarithmic display scaling	dBm, dBμV, dBmV
Linear display scaling	Percentage of reference level (from SW 2.0)
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:	<1.5 dB, typ. 0.5 dB (ref. level to ref. level-50 dB, 20...30 °C)

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, lin. & log.), delta marker, noise marker, (frequency) counter (from SW 2.0)

Inputs/Outputs	
HF Input	N socket
Input Impedance:	50 Ω
VSWR	
[10 MHz...1 GHz/3 GHz]:	<1.5 typ.
Output tracking generator:	
[HMS1010/HMS3010]	N socket
Output Impedance:	50 Ω
Frequency range:	5 MHz...1 GHz [3 GHz]
Output level:	-20...0 dBm, in 1 dB steps
Trigger and external reference input:	
reference input:	BNC female, selectable
Trigger voltage	TTL
Reference frequency	10 MHz
Essential level (50 Ω)	10 dBm
Supply output for field probes:	6 V _{dc} , max. 100 mA (2.5 mm DIN jack)
Audio output (Phone):	3.5 mm DIN jack
Demodulation	AM and FM (internal speaker)

Miscellaneous	
Display:	16.5 cm (6.5") TFT Color VGA Display
Save/Recall memory:	10 complete device settings
Trigger:	Free run, Video Trigger (from SW 2.0), Single Trigger, external Trigger
Interfaces:	
	Dual-Interface USB/RS-232 (HO720), USB-Stick (frontside), USB-Printer (rear side), DVI-D for ext. monitor
Power supply:	105...253 V, 50/60 Hz, CAT II
Power consumption:	Max. 40 Watt at 230V, 50 Hz
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 220 mm
Weight:	3.6 kg

Accessories supplied: Line cord, Operating manual, CD, HZ21 Adapter plug, N plug to BNC socket (2x HMS1010/3010)

Recommended accessories:	
HO730	Dual-Interface Ethernet/USB
HO740	Interface IEEE-488 (GPIB), galvanically isolated
HO3011	Preamplifier -135 dBm DANL (100 Hz RBW)
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
HZ46	4RU 19" Rackmount Kit
HZ72	GPIB-Cable 2 m
HZ99	Carrying Case for protection and transport
HZ520	Plug-in Antenna with BNC connection
HZ525	50 Ω-Termination, N plug
HZ530	Near-Field Probe Set 1 GHz for EMV diagnostics
HZ540/550	Near-Field Probe Set 3 GHz for EMV diagnostics
HZ540L/550L	Near-Field Probe Set 3 GHz for EMV diagnostics
HZ547	3 GHz VSWR Bridge for HMS1010, HMS3010
HZ560	Transient limiter
HZ575	75/50 Ω Converter
HZ030	active probe 1 GHz (0.9 pF, 1 MΩ, including many accessories)