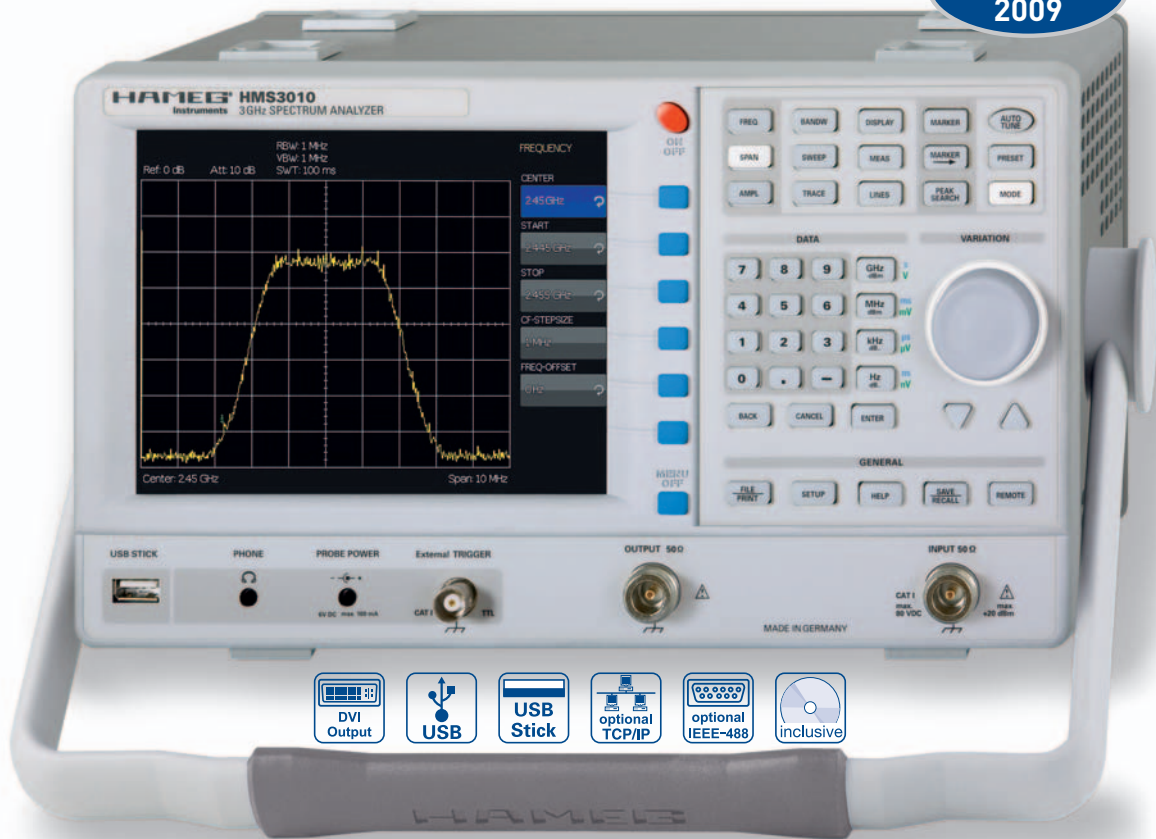


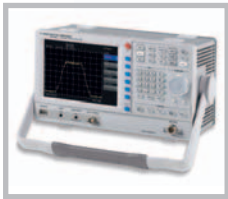
## 3 GHz Spectrum Analyzer HMS3000 / HMS3010

1<sup>st</sup> Quarter  
2009

HMS3010



3GHz Spectrum Analyzer  
HMS3000 without TG



3GHz EMI Near Field Probe  
Set HZ550L



VSWR Test Unit HZ547



- ✓ Frequency range 100kHz...3GHz
- ✓ Amplitude measurement range -114dBm...+20dBm
- ✓ 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
- ✓ Tracking Generator (HMS3010) -20dBm...0dBm in 1 dB steps
- ✓ Integrated AM and FM demodulator (headset output)
- ✓ Detectors: Auto-, min-, max-peak, sample, RMS, quasi-peak
- ✓ 8 Marker with delta marker, miscellaneous peak functions
- ✓ Silent operation (no fan)
- ✓ 6.5" TFT color VGA display, DVI output
- ✓ 3 x USB 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:	± 1 ppm/year
Frequency counter:	
Resolution	1Hz
Accuracy	± (Frequency x failure 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°C...30°C)	<-85dBc/Hz
100kHz from carrier (500MHz, +20°C...30°C)	<-100dBc/Hz
1MHz from carrier (500MHz, +20°C...30°C)	<-120dBc/Hz
Sweep time:	
Span = 0Hz	20ms...100s
Span > 0Hz	20ms...1000s, min. 20ms/600MHz
Resolution bandwidths [-3 dB]:	
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 [-6 dB]:	
HMS1000, HMS1010	9kHz, 120kHz, 1MHz
HMS3000, HMS3010	200Hz, 9kHz, 120kHz, 1MHz
Video bandwidths:	10Hz...1MHz in 1-3 steps
Amplitude	
Display range:	Average noise trace up to +20dBm
Amplitude measurement range:	Typ. -114dBm...+20dBm
Max. permissible DC at HF input:	80V
Max. power at HF input:	20dBm, 30dBm für 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	-80dBm...+20dBm in 1dB steps
Display range	80dB, 40dB, 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:	< 1,5dB, typ. 0,5dB (ref. level to ref. level-50dB, 20°C...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), noise marker, (frequency) counter
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 in 1dB steps
Trigger and external reference input:	BNC socket, switchable
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
Miscellaneous	
Display:	6,5" TFT Color VGA Display
Save / Recall memory:	10 complete device settings
Trigger:	Free run, Video Trigger, external Trigger
Interfaces:	Dual-Interface USB/RS-232 (HO720), USB-Stick (frontside), USB-Printer (rear side) from SW 2.0, DVI for ext. monitor
Power supply:	105/253 V, 50/60 Hz, CAT II
Power consumption:	Max. 40Watt at 230V, 50 Hz
Protection class:	Safety class I (EN61010-1)
Operating temperature:	+5°C...+40°C
Storage temperature:	-20°C...+70°C
Max. 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, Dual-Interface  
USB/RS-232 (HO720), CD, HZ21 Adapter plug (N plug to BNC socket)

### Optional accessories:

HO3011 Preamplifier -135dBm DANL (100Hz RBW)  
HO730 Dual-Interface Ethernet/USB  
HO740 Interface IEEE-488 (GPIB), galvanically isolated  
HZ547 3GHz VSWR Test Unit for HMS1010, HMS3010  
HZ520 Plug-in Antenna with BNC connection  
HZ530 Near-Field Probe Set 1GHz for EMV diagnostics  
HZ540 Near-Field Probe Set 3GHz for EMV diagnostics  
HZ560 Transient limiter  
HZ575 75/50Ω Converter  
HZ46 4RU 19" Rackmount Kit

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