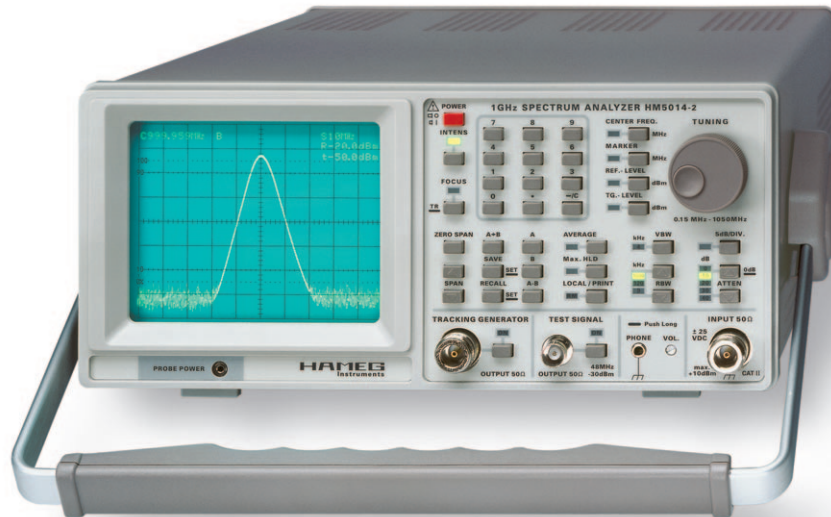
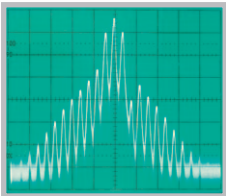


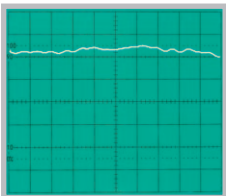
# 1 GHz Spectrum Analyzer HM5014-2



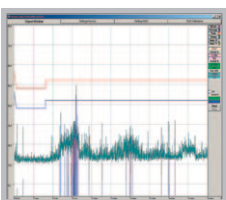
Amplitude-modulated  
RF Signal



Amplifier frequency res-  
ponse measured using a  
tracking generator



Measurement of line-con-  
ducted interference



Frequency range: 150 kHz to 1 GHz

Amplitude measurement range: - 100 dBm to + 10 dBm

Phase Synchronous, Direct Digital frequency Synthesis (DDS)

Resolution bandwidths (RBW): 9 kHz, 120 kHz and 1 MHz

Pre-compliance EMI measurement

Serial interface for documentation and control

Software for documentation included

Additional measurement functions for EMI measurements  
with optional software

Tracking Generator with output amplitude from - 50 dBm  
to + 1 dBm



## 1 GHz Spectrum Analyzer HM5014-2

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

### Frequency Characteristics

Frequency Range:	0.15 MHz to 1.050 GHz
Stability:	± 5 ppm
Ageing:	± 1 ppm/year
Frequency Resolution:	1 kHz (6½ digit in readout)
Center Frequency Range:	0 to 1.050 GHz
LO Frequency Generation:	TCXO with DDS (Digital Frequency Synthesis)
Span Setting Range:	Zero Span and 1 MHz - 1000 MHz (1-2-5 Sequence)
Marker:	
Frequency Resolution:	1 kHz, 6½ digit,
Amplitude Resolution:	0.4 dB, 3½ digit
Resolution Bandwidths (RBW) @ 6dB:	1 MHz, 120 kHz and 9 kHz
Video Bandwidth (VBW):	4 kHz
Sweep Time (automatic selection):	40 ms, 320 ms, 1 s*

### Amplitude Characteristics (Marker Related) 150 kHz – 1 GHz

Measurement Range:	-100 dBm to +10 dBm
Scaling:	10 dB/div., 5 dB/div.
Display Range:	80 dB (10 dB/div.), 40 dB (5 dB/div.)
Amplitude Frequency Response (at 10 dB Attn., Zero Span and RBW 1 MHz, Signal - 20 dBm):	± 3 dB
Display (CRT):	8 x 10 division
Amplitude Scale:	logarithmic
Display units:	dBm
Input Attenuator Range:	0 - 40 dB (10 dB increments)
Input Attenuator Accuracy rel. to 10 dB:	± 2 dB
Max. Input Level (continuous)	
40 dB attenuation:	+20 dBm (0.1 W)
0 dB attenuation:	+10 dBm
Max. DC Voltage:	± 25 V
Max. Reference Level:	+10 dBm
Reference Level Accuracy rel. to 500 MHz, 10 dB Attn., Zero Span and RBW 1 MHz:	± 1 dB
Min. Average Noise Level:	approx. -100 dBm (RBW 9 kHz)
Intermodulation Ratio (3 <sup>rd</sup> Order):	typical > 75 dBc (2 Signals: 200 MHz, 203 MHz, - 3 dB below Reference Level)
Harmonic Distortion Ratio (2 <sup>nd</sup> harm.):	typical > 75 dBc (200 MHz, Reference Level)
Bandwidth Dependent Amplitude Error rel. to RBW 1 MHz and Zero Span:	± 1 dB
Digitization Error:	± 1 digit (0.4 dB) at 10 dB/div. scaling (Average, Zero Span)

### Inputs / Outputs

Measuring Input:	N socket
Input Impedance:	50 Ω
VSWR: (Attn. ≥ 10 dB)	typ. 1.5:1
Tracking Generator Output (HM5014-2):	N-socket
Output Impedance:	50 Ω
Test Signal Output:	BNC socket
Frequency, Level:	48 MHz, -30 dBm (± 2 dB)
Supply Voltage for Probes (HZ 530):	6 V DC
Audio Output (phone):	3.5 mm Ø jack
RS-232 Interface:	9-pin / Sub-D

### Functions

Keyboard Input:	Center Frequency, Reference Level, Tracking Generator Level
Rotary Encoder Input:	Center Frequency, Reference Level, Marker, Tracking Generator Level
Max. Hold Detection:	Peak Value Acquisition
Quasi-Peak Detection: *	Quasi-Peak Valuation
Average:	Mean Value Acquisition
Ref. Spectrum Memory:	2 k x 8 bit
SAVE / RECALL:	Save and Recall of 10 Instrument Settings
AM demodulation	for audio
LOCAL:	RS-232 Remote Control OFF
Readout:	Display of various Measurement Parameters

### Tracking Generator

Frequency Range:	0.15 MHz to 1.050 GHz
Output Level:	-50 dBm to +1 dBm
Frequency Response (0.15 MHz – 1 GHz)	
+1 dBm to -10 dBm:	± 3 dB
-10.2 dBm to -50 dBm:	± 4 dB
Digitization Error:	± 1 digit (0.4 dB)
Spurious Outputs:	better than 20 dBc

### General information

CRT:	D14-363GY, 8 x 10 cm with internal graticule
Acceleration Voltage:	approx. 2 kV
Trace Rotation:	adjustable on front panel
Ambient Temperature:	10° C to 40° C
Power Supply:	105-253 V, 50/60 Hz ± 10 %, CAT II
Power Consumption:	approx. 35 W at 230 V/50 Hz
Safety Class:	Safety Class I [EN61010-1]
Dimensions (W x H x D):	285 x 125 x 380 mm
Weight:	approx. 6.5 kg

\*) in combination with software AS100E only

**Accessories supplied:** Line Cord, Operators Manual, HZ21 Adapter Plug  
(N-plug with BNC socket) and Software for Windows on CD-ROM

#### Optional accessories:

HZ70 Opto-Interface (with optical fiber cable)  
HZ520 Antenna  
HZ530 Near Field Probe Set for EMI Diagnosis

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