HM5012 & HM5014, the Spectrum Analyzers for EMC Measurements

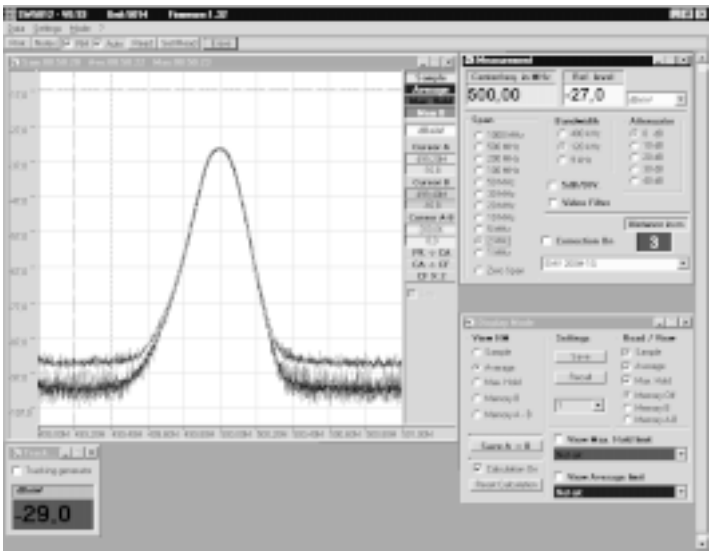
- **Continuous frequency range from 150 kHz to 1050 MHz.**
- **Amplitude range from -100 dBm to +13 dBm (7 dBµV to 120 dBµV) 80 dB on-screen**
- **Resolution bandwidths of 9 kHz, 120 kHz, 400 kHz**
- **Intermodulation-free dynamic range 75 dB**
- **Save / Recall**

Technical Characteristics

The new spectrum analyzer HM5012 and HM5014 is based in general on the high frequency characteristics of the HM5010 and the HM5011 analyzers. The usable frequency range is therefore from 150 kHz to above 1 GHz. The available resolution bandwidths are 9kHz, 120kHz and 400 kHz. Completely new is primarily the processor-controlled operation and a digital signal display which works in real-time, and is resolved with up to 2000 points over the entire screen. The screen will also display all selected frequency settings and the marker results.

The unique features of this spectrum analyzer are the extensive EMC measurement capabilities. These include the amplitude indication in Peak and Average modes. For the precise evaluation of the signals a marker is provided that will give a readout for amplitude and frequency on-screen.

An additional advantage is that newly acquired signals can be compared with the content of the reference storage. Complicated and repeatedly used equipment adjustments can be saved by use of the Save/Recall function.



HM 5014

The Model HM5014 includes a tracking generator that can be used to evaluate the frequency characteristics of 4-terminal devices, such as filters.

The Interface

The Analyzers are supplied with an RS-232 interface for PC communication and print-out via PC. The optional HZ70 optoisolator with fiber-optics cable is available to isolate the spectrum analyzer from interference effects and ground loops.

The Software

The software for extended functions and for the evaluation of measurement results via PC is part of the spectrum analyzer and provides the following features:

Numeric indication of measurement values.
Average, peak and quasi peak values with corresponding cursor.
Storage of reference spectra for comparison.
Freely definable limit lines.
Indication of above-limit signals.
Correction factors for antennas.
Script-control for automatic measurements.
Printout in tabular form (e. g. table calculations).
B/W or color printouts of the spectra with printer selection for all printers supported by Windows ©.

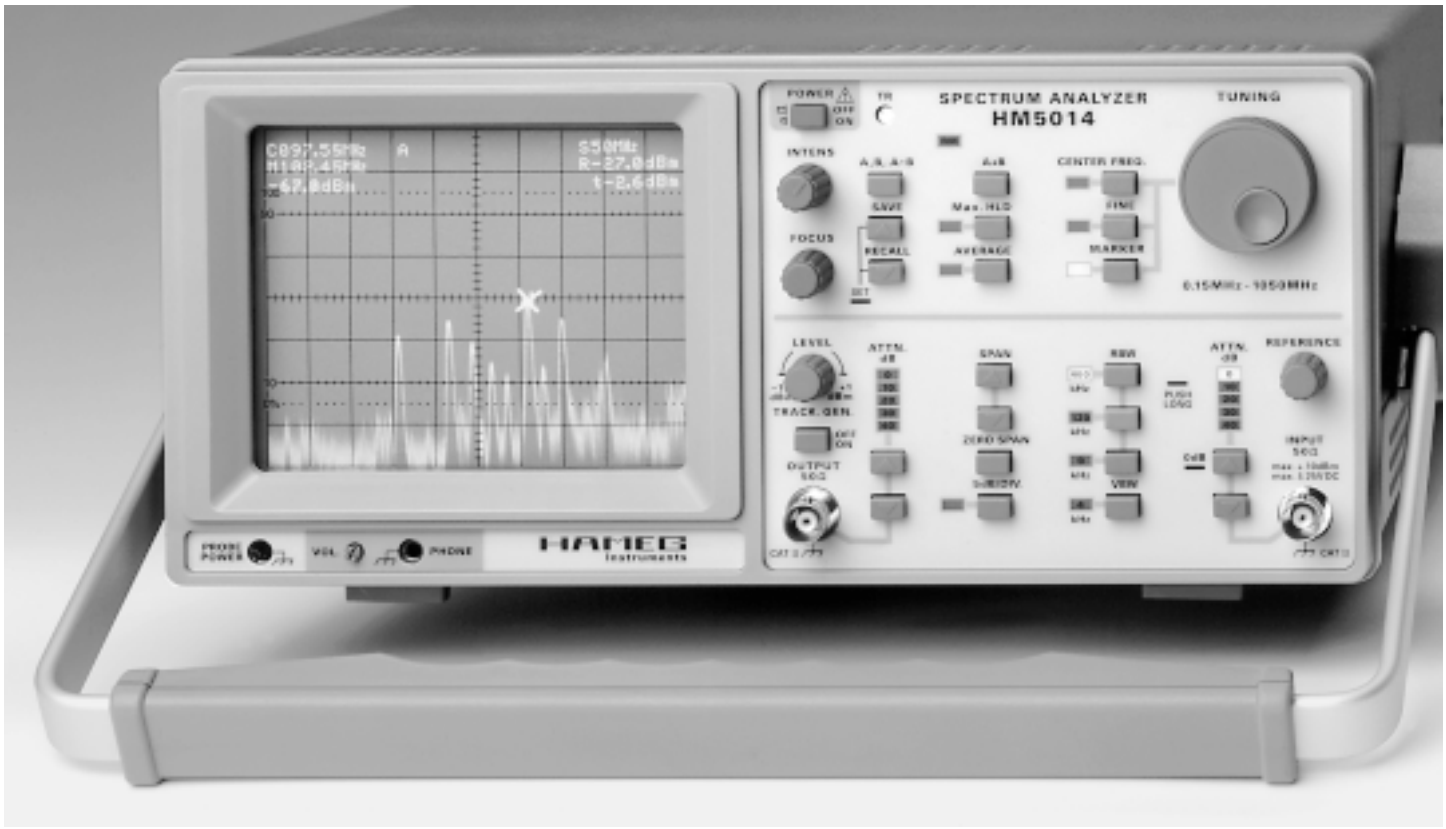
A manual for various EMC applications is provided.

Accessories supplied

Software for evaluation, Documentation and Remote Control. Power Cable, Operating Manual.

Optional accessories

Optical Interface (RS232)	**HZ70**
Telescope Antenna	**HZ520**
Transient Limiter	**HZ560**
Near Field Probes (E, H, High Imp. Probe)	**HZ530**
LISN (EMC)	**HM6050**



Specifications

Frequency

Frequency Range:	0.15 MHz to 1050MHz
Frequency Resolution displayed:	10kHz (5½ Digit in Readout)
Center Frequency Range	0.15 MHz - 1050 MHz
Accuracy:	±20kHz
Stability (Drift)**:**	<150kHz / hour
Span:	Zero span and 100kHz/Div to 100MHz/Div in steps of 1-2-5
Accuracy:	±5% of the selected span
Marker:	absolute Marker
Marker Resolution (Frequency)	5½ digits
Marker Resolution (Level)	3½ digits
Marker Readout Accuracy:	±(0.1% span + 20kHz)
Resolution Bandwidth, RBW (3dB):	9kHz, 120kHz and 400kHz
Video Bandwidth, VBW:	4kHz
SWT (fixed)**:**	40ms, 320ms

Amplitude

Measurement Range:	–100dBm to +13dBm
Displayed Average Noise Level:	–102dBm (120kHz RBW)
Frequency Response	
Relative to 500 MHz, ATTN 10 dB	±2 dB
Input Attenuator Range:	40 dB, 10 dB steps
Accuracy (reference level):	±1 dB
Maximum Safe Input Level	
Attenuator setting 20db:	+20 dBm (0,1W)
Attenuator setting 0dB:	+10 dBm
DC:	±25 V
Display Range:	40, 80 dB, 8 Divisions
Scale Units	dBm
Reference Level:	-99 to +13 dBm (+var.)
Resolution Bandwidth Switching Uncertainty:	±1dB
Spurious responses:	
Intermodulation (3rd Order)**:**	–75 dBc
(2 Signals, –27 dBm each, Frequency distance>3MHz)	
Harmonic Distortion (2nd, 3rd)**:**	<–75 dBc
Absolute Amplitude Accuracy:	±2.5 dB

Inputs / Outputs

Front Panel	
Input Connector	BNC (F) Impedance: 50Ω
Probe Power:	6V (Near field probes)
Tracking Generator Out (HM5014)	BNC (F) Impedance: 50Ω

Special Functions

Average	32 measurements
SAVE/RECALL	9 complete Set-ups
Peak-Detection, Max. Hold	
Hold	Trace stored on screen
Reference Curve	
AM-Demodulator	Ear Phones

Tracking Generator (only Model HM5014)

Output Frequency Range:	150 kHz to 1050 MHz
Output Power Level	–50dBm bis +1dBm
Output flatness (150 kHz to 1 GHz)	±1.0dB
Spurious Outputs	
Harmonic Spurs	>20dBc
Non-Harmonic Spurs	>20dBc

General

Temperature Range	
Operating	10°C to 40° C
Storage:	–40°C to 70° C
Power Requirements:	
Voltage	115 / 230V
Frequency	50-60Hz
Power consumption	approx. 43VA
CRT:	8 x 10cm
Protective System:	Safety Class I (IEC 1010-1)
Dimensions	**W** 285, **H** 125, **D** 380mm
Weight:	approx.: 6kg

Subject to change without notice 06/98