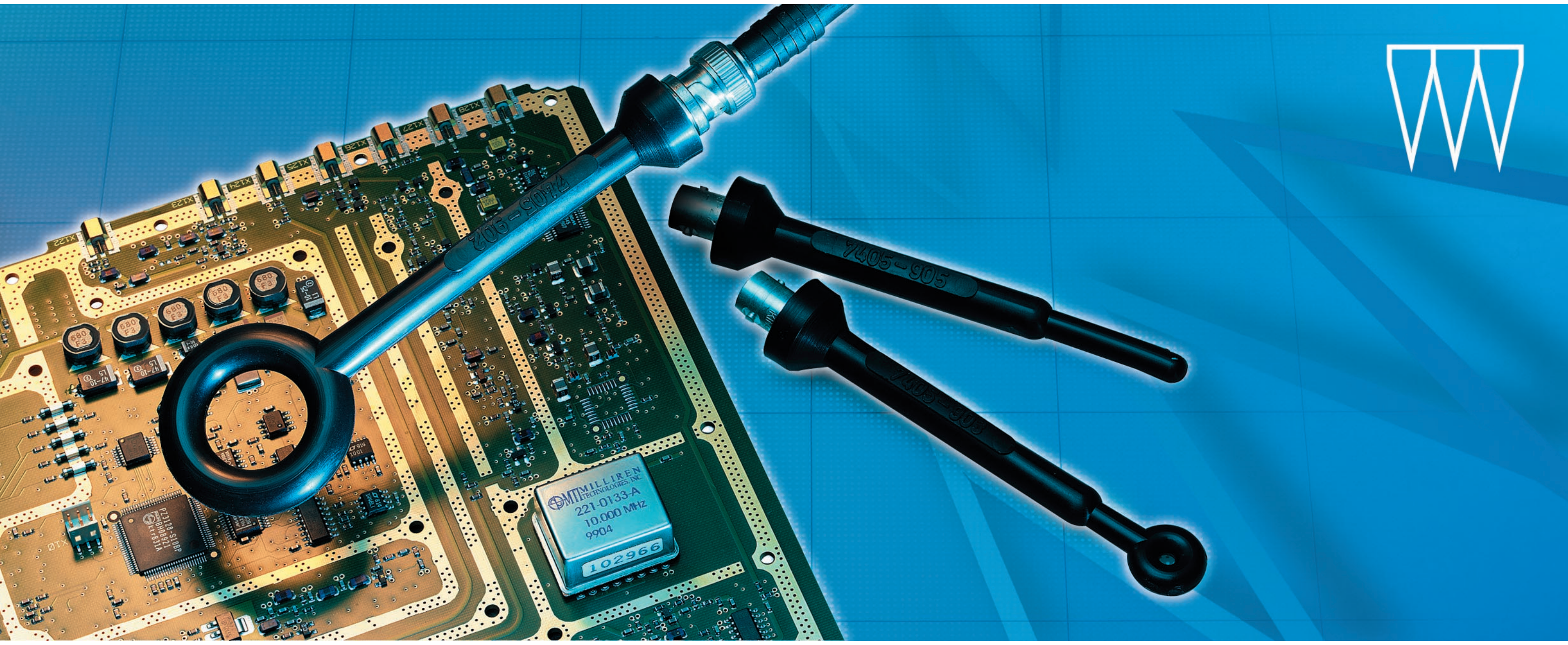

Detecting EMC trouble spots

Probe Set HZ-11 for E and H near-field measurements

- Frequency range 100 kHz to 2 GHz
- Locating radiated interference sources
- Detecting EMI-sensitive spots
- Assessing interference field strength in the far field
- Measuring shielding effectiveness
- Identifying defective components
- Evaluating near-field impedance

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Probe Set HZ-11 for E and H near-field measurements is a diagnostic tool for detecting trouble spots both in the fields of EMI and EMS. Its main application is in the diagnosis of radiated emissions from printed circuit boards, ICs, cables, leakage spots in shielded enclosures, and similar sources of electromagnetic interference. The detected emissions can be displayed on test receivers, spectrum analyzers or oscilloscopes. Since the probes are passive when operated without a preamplifier, they can also be used to find EMI-sensitive components.

The probe set comprises

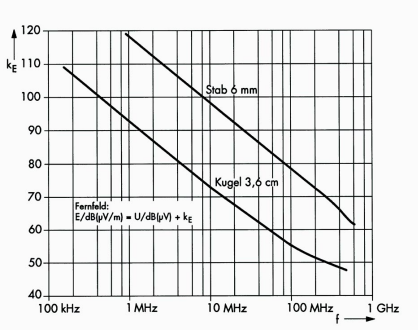
- three passive H-field probes (electrically shielded loops with diameter of 1 cm, 3 cm and 6 cm),
- two passive E-field probes (one rod and one spherical probe),
- one probe extension and
- one broadband preamplifier.

The H-field probes have the directivity of loop antennas. Their sensitivity is proportional to their diameter. The small probes are more suitable for locating sources of radiated interference and they also have a higher upper frequency limit.

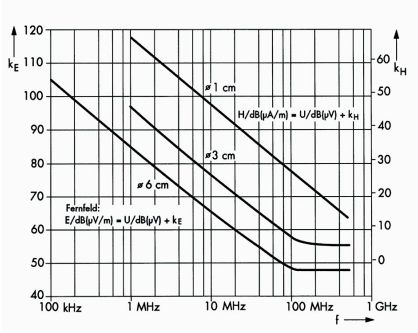
The E-field probes are designed for omnidirectional signal reception over a wide frequency range. On approaching a radiation source, the probe is capacitively coupled with the field. The rod probe is better suited for locating radiated interference sources than the spherical probe, its sensitivity is however lower.

The broadband preamplifier improves the S/N ratio in measurements of weak signals. It provides a gain of more than 30 dB in the frequency range up to 1 GHz and can be used up to 3 GHz. In the range to 1 GHz it has a noise figure of about 3 dB and a 1 dB compression point of 8 dBm (output level). Signal distortion is kept to a minimum. A power supply unit comes as standard.

The near-field probe set comes in a handy transit case accommodating all parts of the set and providing effective protection against damage during transportation.



Antenna factors of E-field probes; the rod probe can be used up to approx. 2 GHz



Antenna factors of H-field probes; the 1 cm probe can be used up to approx. 2 GHz

Electrical data of probes

Type of probe	Measurement of	E- or H-field rejection	1st resonant frequency
Loop 6 cm	H-field	41 dB	790 MHz
Loop 3 cm	H-field	29 dB	1.5 GHz
Loop 1 cm	H-field	11 dB	2.3 GHz
Sphere 3.6 cm	E-field	30 dB	>1 GHz
Rod 6 mm	E-field	30 dB	>2 GHz

Electrical data of preamplifier

Gain of broadband preamplifier

100 kHz	1 MHz	100 MHz	1 GHz	2 GHz	3 GHz
35 dB	38 dB	39 dB	33 dB	26 dB	14 dB

Noise figure at 500 MHz	3.5 dB typ.
Saturated output level at 100 MHz	12 dBm typ.
1 dB compression point at 100 MHz	8 dBm typ.

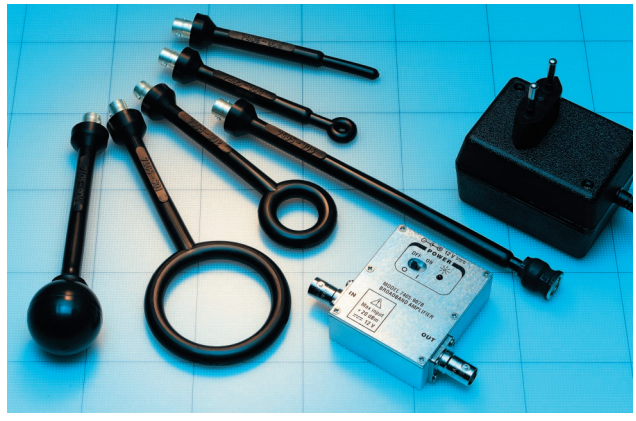
General data

Dimensions of transit case in mm; weight	310 x 260 x 75; 1.6 kg

Ordering information

Probe Set for E and H near-field measurements	HZ-11 100 kHz to 2 GHz
with power supply for 220 V	0816.2770.04
with power supply for 110 V	0816.2770.05

Near-field Probe Set HZ-11 with probe extension and broadband amplifier



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