

E-Field Probe System EFS-105

Technical Data

FEATURES

1D E-Field Probe

Ultra Small Probe Head:

6.6 × 6.6 mm² Cross Section

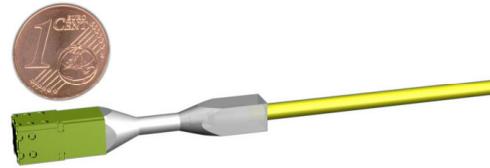
High Spatial Resolution

Optical Fiber Connection:

Negligible Field Perturbation

Optical Power Supply – No Batteries:

Unlimited Operating Time



EFS-105 Probe Head

Broadband Operation: 500kHz ... 3GHz

Dynamic Range: typ. 130 dB (1Hz)

Low Noise: typ. $10\mu\text{V}/(\text{m}\times\sqrt{\text{Hz}})$ @ 200..500MHz

typ. $30\mu\text{V}/(\text{m}\times\sqrt{\text{Hz}})$ @ 5MHz..3GHz

Linear Phase Response

APPLICATIONS

Antenna Near and Far Field Measurements

Vector Measurements: Amplitude and Phase

General EMC Measurements

Verification of Field Homogeneity (e.g. in GTEM Cells)

Shielding Measurements

Sniffle Probe – Leak Detection

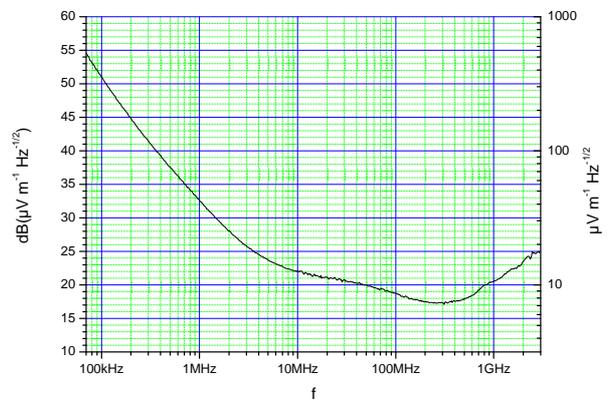
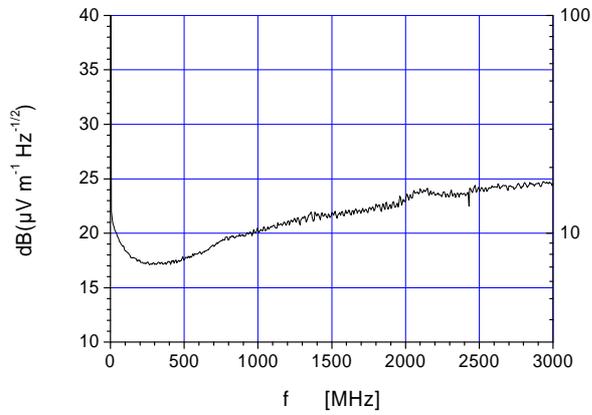
Pulse, UWB, ESD Measurements (Time Domain)

GENERAL DESCRIPTION

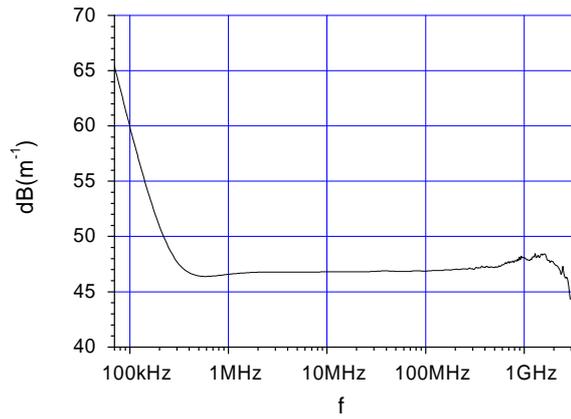
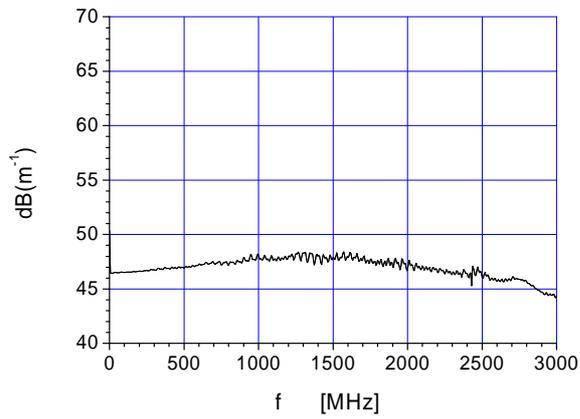
The field probe system is designed for broadband measurements of the electric field strength with full spectral or temporal resolution, respectively. It consists of the probe head and the base unit, both connected by an optical fiber cable. The optical link and the small size of the probe head guarantee a minimized field perturbation.

The system acts as a small broadband active antenna with the coaxial cable replaced by an analog optical fiber link. The electrical output signal of the probe system directly represents one spatial component of the electric field. It contains the full spectral and time domain information.

CHARACTERISTICS



Probe Sensitivity (Noise Equivalent Field Strength) (typ.)



Frequency response (Antenna Factor) (typ.)

Lower 3dB Frequency: < 500kHz typ.

1dB Compression Point: 30dB(V/m) typ.

MECHANICS

Probe Head Dimensions (mm): 6.6 × 6.6 × 42 mm³ (excl. optical connection cable)

Optical Probe Connection Cable:

Diameter 3mm

Length: standard 5m, other on request

min. bend radius 50mm

Base Unit (mm): 230 × 300 × (42+40) (40mm cable compartment)

Output Connector: N female

Laser Safety: Laser Class 1, Key Switch, Auto Switch-Off



EFS-105 Base Unit

OPERATING CONDITIONS

Temperature: 10°C...35°C

Relative Humidity: T.B.D., non-condensing

Power supply: DC 9..30V
or AC 100..240V, 50/60 Hz (wall adapter included)

Power consumption: 2W typ., 3W max. (independent of supply voltage)

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