

Near field probe set incl. RF amplifier - 3 GHz

Features

- Wide frequency range from 1 MHz up to 3 GHz
- High-quality rubber coated probes ensure the highest durability and isolation
- Push-pull SMB connectors for the fast probe change, no more cable twisting
- 20 or 40 dB USB powered RF amplifier ensure maximum sensitivity even for low power signals
- Downloadable compensation data for each probe



Product description

Each designer was facing the situation when its product was exceeding EMI regulatory limits and therefore entire qualification was delayed. Our near field probe set could help you quickly identify noise sources and find the right solution to suppress them.

EMCgear Near field probe set includes full range of the most versatile type of probes to cover all daily tasks of engineer. Supplied RF amplifier significantly increases resolution of probes and makes analysis of weak signals much easier.

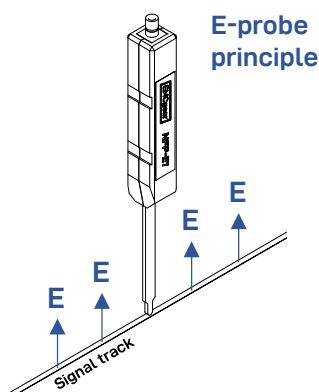
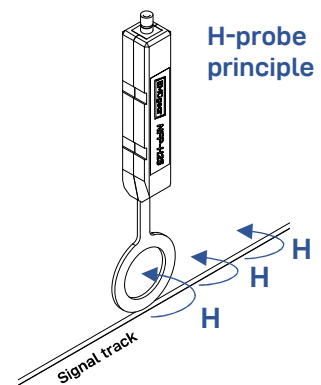
About near field probes

In general, there are two types of near field probes widely used.

Magnetic field probe (or H-probe) has circular head and simply say works like lasso for magnetic field in its proximity.

Probe is sensitive on change of magnetic field (dH/dt), therefore its output will correspond to change of current flowing thru scoped loop in time (dl/dt).

From principle of operation maximum sensitivity of this probe is achieved while vector of measured magnetic field points perpendicular to the center of the probe head, like shown on the following picture.



Electric field probe (or E-probe) is equipped with pin head and sense change of electric field in its proximity (dE/dt). Output signal from this type of probe reflect change of voltage potential (dV/dt) around its pin.

During identification of noise sources, we suggest to start with the largest H-probe, i.e. **NFP-H25** and do some pre-scan around investigated PCB or assembly. Then we can proceed with the smaller one and focus on entire suspicious electronic components or PCB traces. The smaller types e.g. **NFP-H15 / H10** or **E-1** offer higher selectivity within reduced sensing area while still maintaining high sensitivity.

Technical parameters
Near field probes (NFP)

| | |
|------------------------------------|-----------------|
| Impedance | 50 Ohm |
| Output terminal | SMB male |
| Isolation voltage | 50 VDC / AC |
| Operating frequency range | 1 MHz to 3 GHz |
| Self-resonant frequency NFP-H25 *) | Approx. 1,2 GHz |
| Self-resonant frequency NFP-H15 *) | Approx. 1,8 GHz |
| Self-resonant frequency NFP-H10 *) | Approx. 2,0 GHz |
| Self-resonant frequency NFP-E1 *) | Approx. 1,5 GHz |

*) Probes can be used beyond their self-resonant frequency.

Technical parameters
RF amplifier (RFA-30)

| | |
|----------------------------|--|
| Input / output impedance | 50 Ohm |
| Input / output terminal | SMA female |
| Operating frequency range | 1 MHz to 3 GHz |
| Gain | 20 dB variant 40 dB variant Typ. 20 dB Typ. 40 dB |
| Input power | 20 dB variant 40 dB variant Max. 16 dBm Max. 13 dBm |
| Output power (P1dB @ 2GHz) | 20 dB variant 40 dB variant Typ. 20 dBm Typ. 16 dBm |
| Input VSWR | < 1,50 (f < 1 GHz) < 1,75 (f < 3 GHz) |
| Noise figure | Typ. 3,4 dB |
| Power supply terminal | Mini USB socket |
| Current consumption | 20 dB variant 40 dB variant Typ. 70 mA Typ. 100 mA |

Scope of delivery

| | |
|--|-------------|
| Near field probe, H-field, 10 mm | NFP-H10 |
| Near field probe, H-field, 15 mm | NFP-H15 |
| Near field probe, H-field, 25 mm | NFP-H25 |
| Near field probe, E-field, 10 mm | NFP-E1 |
| SMA to SMB cable, 1 m, RG174 | C-SASB10174 |
| SMB to BNC cable, 0,5 m, RG174 *) | C-SBBC05174 |
| RF amplifier, 1 MHz to 3 GHz, 20 dB *) | RFA-30-20dB |
| RF amplifier, 1 MHz to 3 GHz, 40 dB *) | RFA-30-40dB |
| USB cable, USB A to Mini USB, 1 m *) | - |
| Transport box 280x230x50 mm | - |
| Compensation data (downloadable) | - |

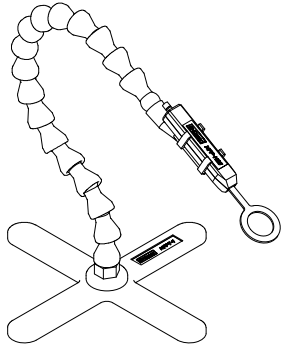
*) Supplied only with RF amplifier option.

Warranty

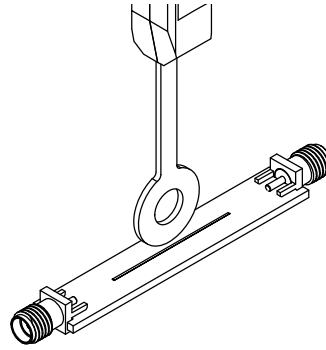
2-year manufacturer warranty

Optional accessories

| Description | Order code |
|-------------------------------------|------------|
| Near field probe measurement tripod | NFPT-1 |
| 50 Ohm calibration waveguide, SMA | RFW-50SS |

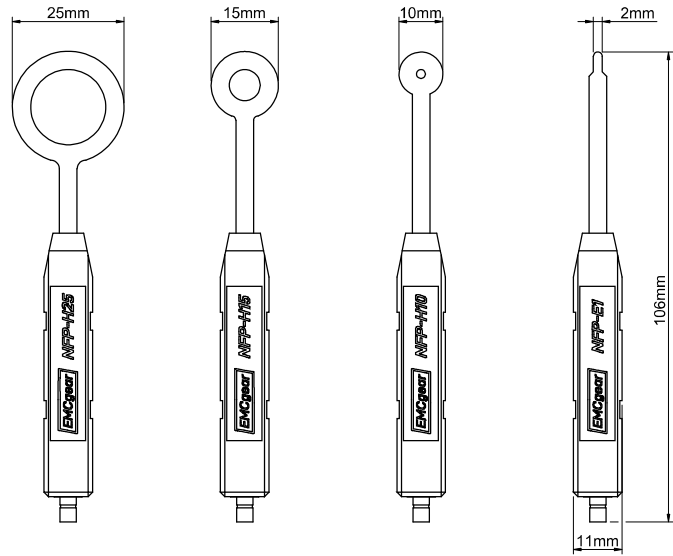


Near field probe measurement tripod
NFPT-1

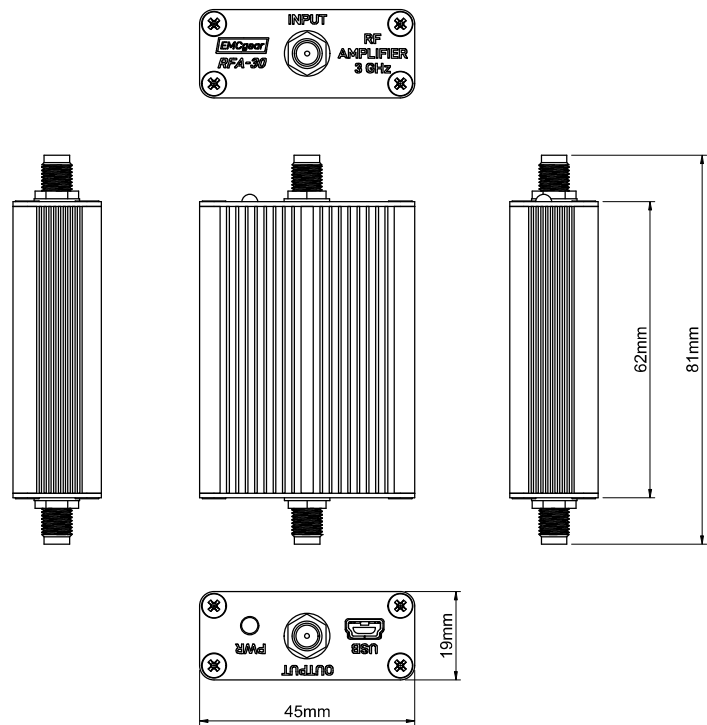


50 Ohm calibration waveguide, SMA
RFW-50SS

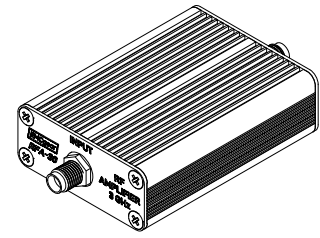
Mechanical dimensions
Near field probes (NFP)



Mechanical dimensions
RF amplifier (RFA-30)

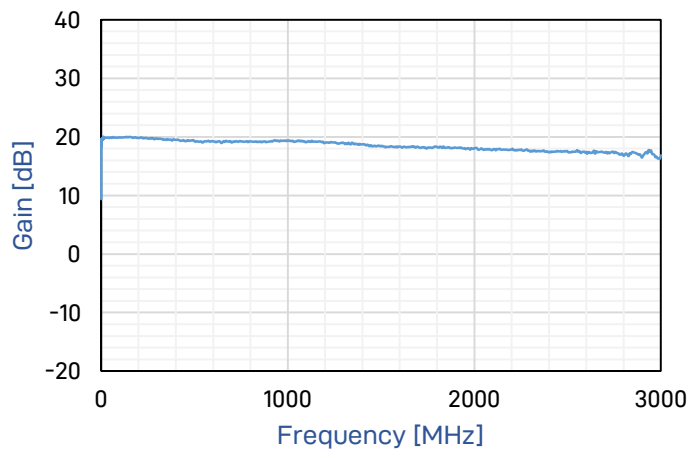
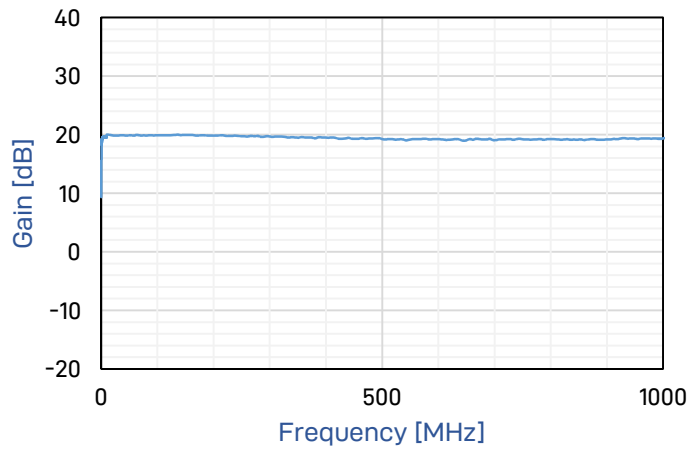
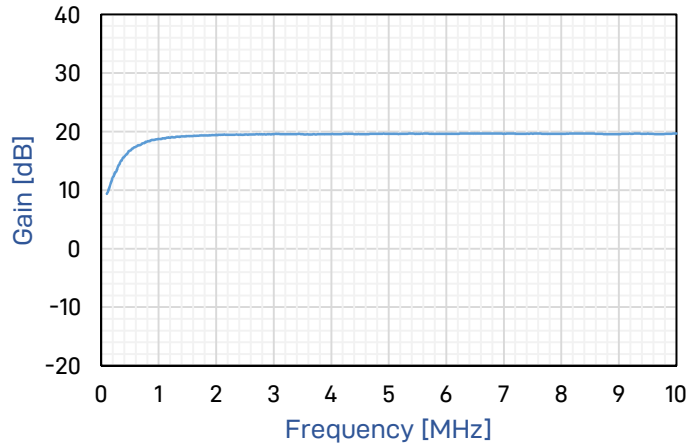


RFA-30-20dB - RF amplifier 20 dB

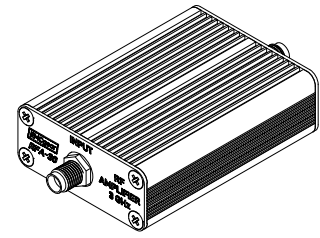


Frequency characteristics

RFA-30-20dB
(20 dB variant)

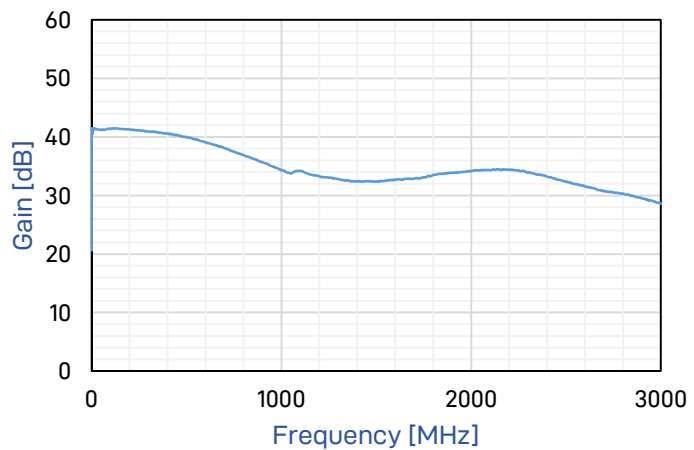
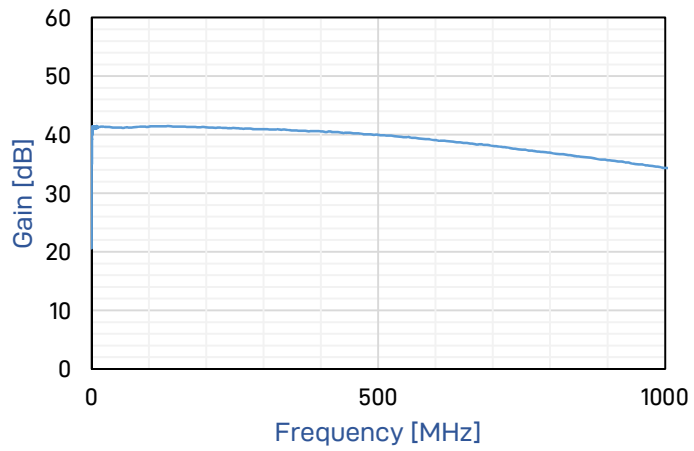
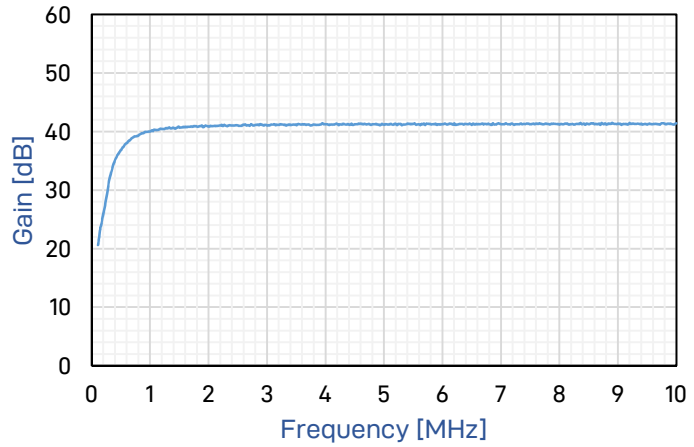


RFA-30-20dB - RF amplifier 40 dB

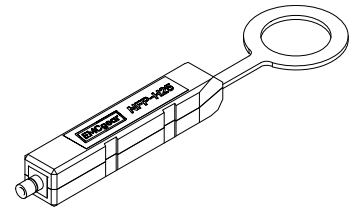


Frequency characteristics

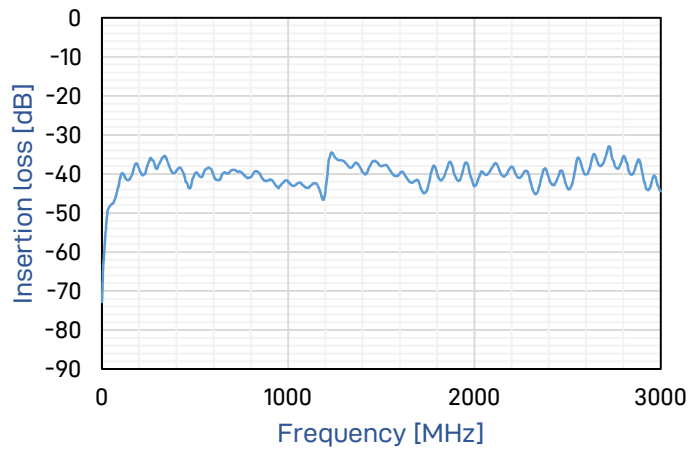
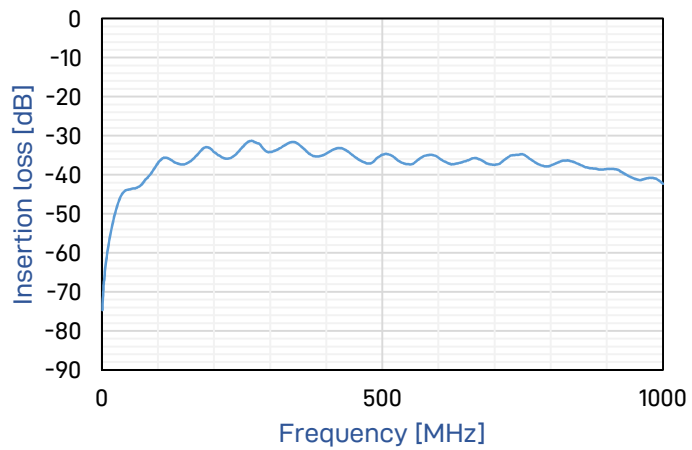
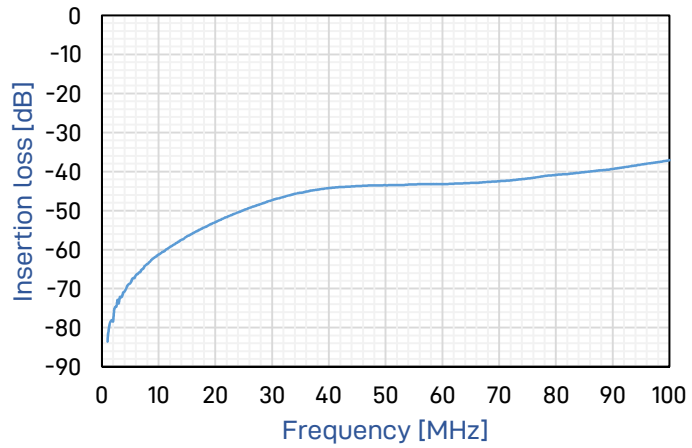
*RFA-30-40dB
(40 dB variant)*



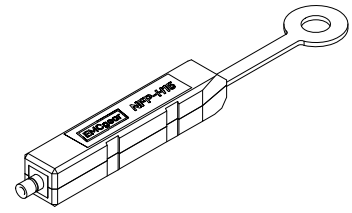
NFP-H25 - magnetic field probe



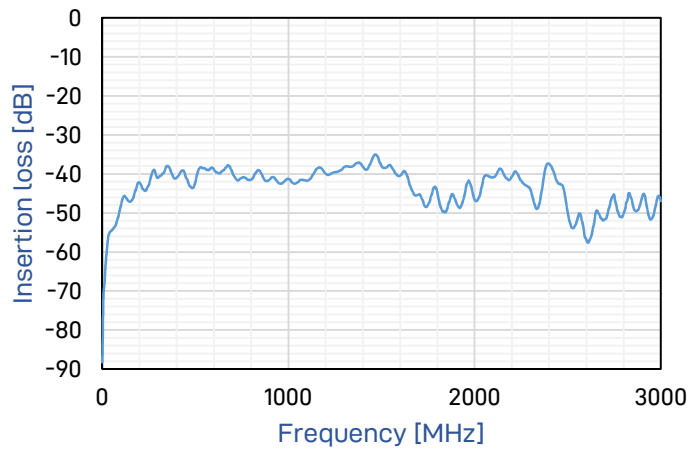
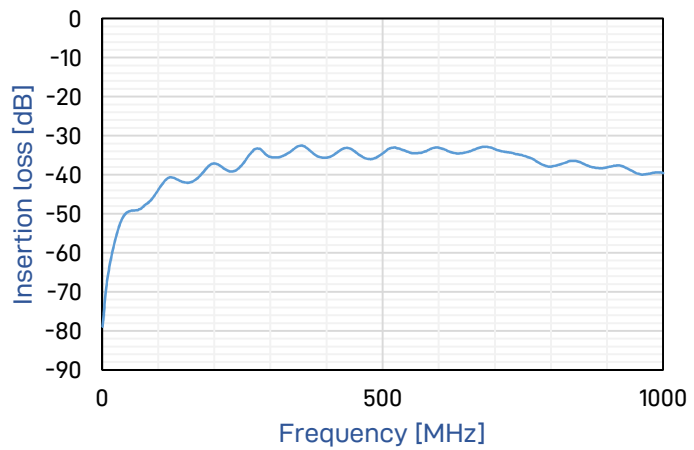
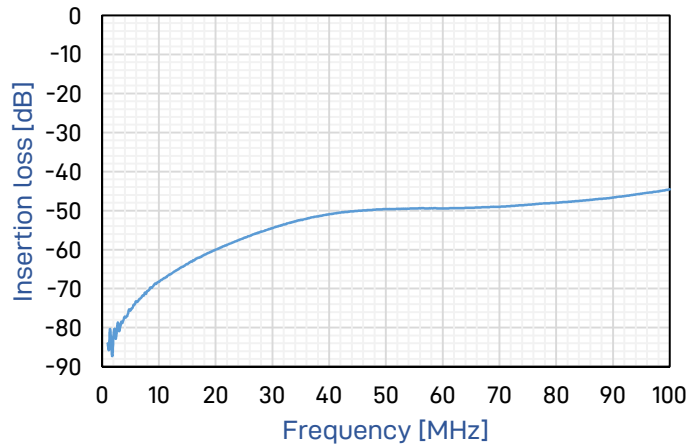
Frequency characteristics



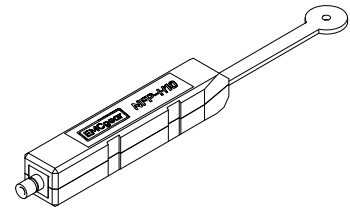
NFP-H15 - magnetic field probe



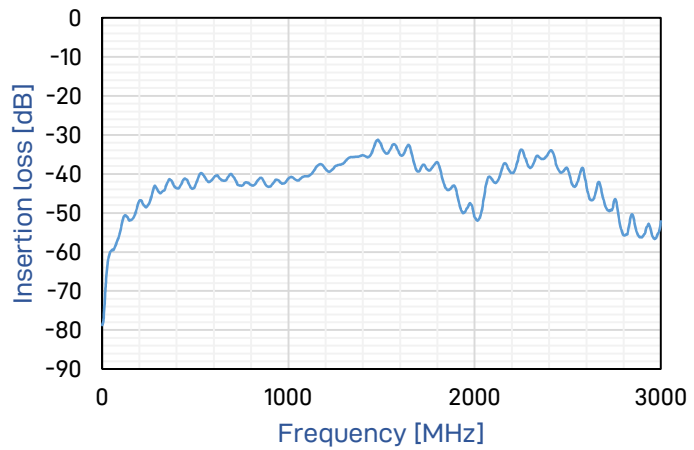
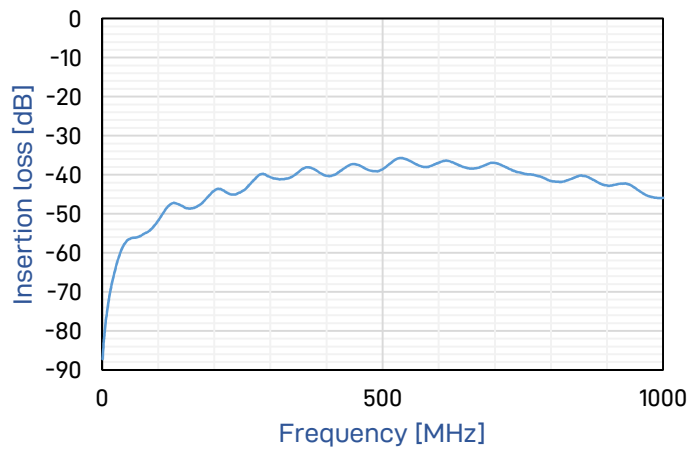
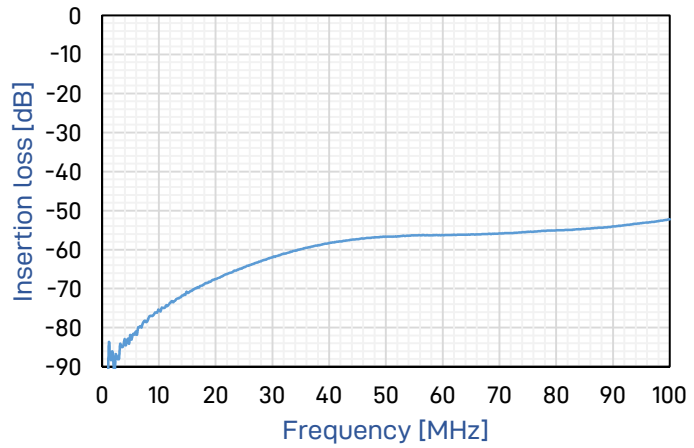
Frequency characteristics



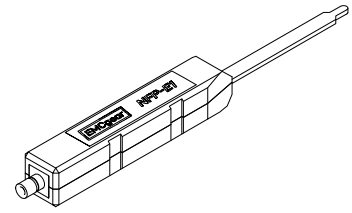
NFP-H10 - magnetic field probe



Frequency characteristics



NFP-E1 - electric field probe



Frequency characteristics

