

Active Receive Loop Antenna



Description:

Active, shielded Loop Antenna with nearly constant antenna factor over the entire frequency range (9 kHz - 30 MHz), battery driven to minimize disturbance influence from power line.

Specifications:	
9 kHz – 30 MHz	Frequency Range:
20 dB/m	Antenna Factor for fict. E-fieldstrength:
-31.5 dB/Ωm	Antennna Factor for H-fieldstrength:
0.5 m	Loop Diameter:
30-130 dBμV/m	Fieldstrength Measuring Range QP-Detector / 9 kHz IF-Bandwidth:
8-130 dBμV/m	Fieldstrength Measuring Range AV-Detector / 200 Hz IF-Bandwidth:
< +/- 1 dB	Frequency Response:
typ. 12 h	Operation time with full Battery Capacity:
12 V NiMH 1.9 Ah	Battery:
ACS 110	Recommended Charger:
1/4", 3/8"	Mounting Thread:
520 x 585 x 120 mm	Dimensions:
1.9 kg	Weight:

Applications:

The Active Loop Antenna FMZB 1519 B can be used for the frequency selective measurement of magnetic fields (of fictitious electric field) in the longwave, midwave and shortwave frequency ranges. It can be used for testing according to CISPR, MIL, FCC, EN, ISO, ANSI, ETSI and many other standards. Combined with a CISPR 16 EMI-receiver a convenient fieldstrength measuring system with low noise and pulse measuring capabilities is composed. The FMZB 1519 B can also be used with a spectrum analyzer. The shielded aluminium housing is equipped with rubber feet for desktop operation or can be mounted to a tripod using the female camera threads (1/4" and 3/8") at the bottom

The FMZB 1513 is equipped with 10 NiMH-Mignon cells. The battery voltage is indicated with a green LED for normal operation, with both red and green for reserve and with red only for urgent recharge requirement. It is not possible to measure during recharging.

*A full battery charging period using the recommended charger takes around 5 hours. **The PWR-switch must be set to OFF during the recharging period, otherwise no charging takes place!** The charging connector is disabled while the PWR switch is set to ON (normal measuring operation), this avoids disturbances generated by the charger having an unwanted influence on the measurement.*



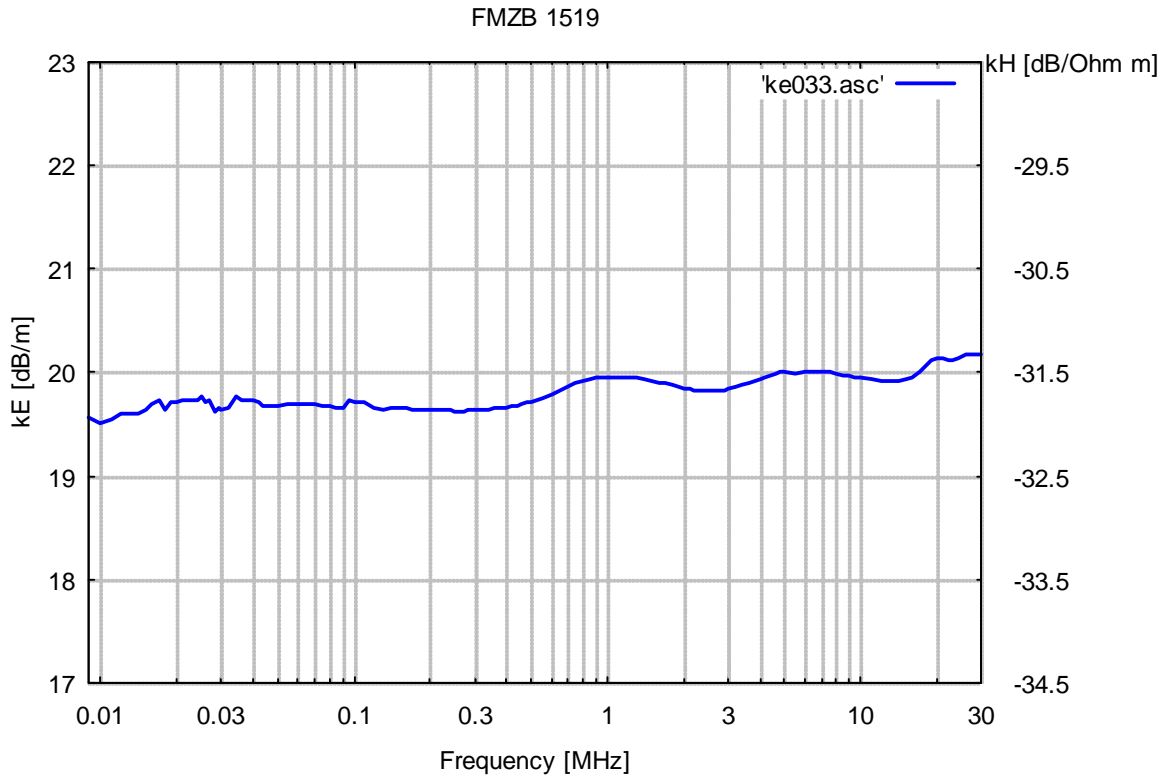


Fig. 1: Typical Frequency Response

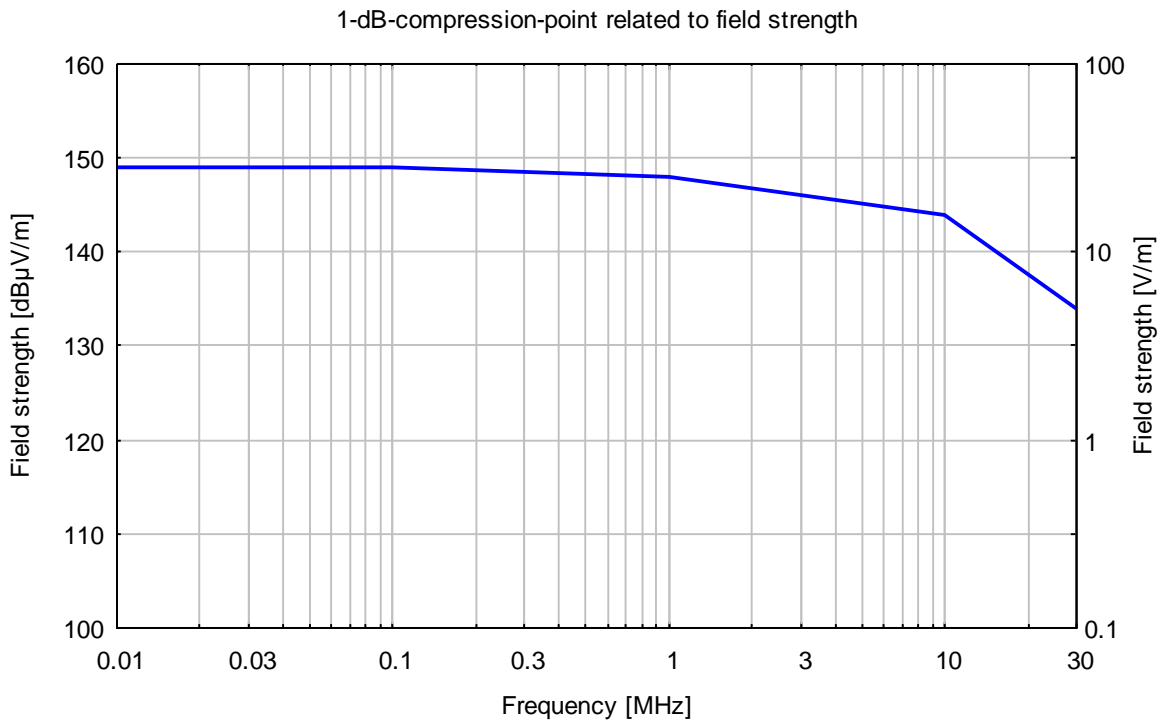


Fig. 2: Typical 1-dB-compression-point

Noise Floor

Displayed noise level of the FMZB 1519 B in reference to field strength, measured with a CISPR 16-1-1 compliant measuring receiver.

The uncorrected voltage display of an EMI-receiver in dB μ V was added with the antenna factor for fic. E-fieldstrength (+20 dB/m) to obtain the field strength-related noise-floor of the system. The figures show the measured noise floor related to field strength for the FMZB 1519 B at the FCLE 1535 receiver for different detectors and bandwidths.

Add the desired signal-to-noise-ratio to calculate the sensitivity of the antenna.

Noise floor for different detectors and bandwidths

