



Active Version



Passive Version

Rev 1.0  
13.10.2014

## Magnetic Field Tracking Antenna - MDF Series

Perfect as Signal Tracker and Power Meter, Frequency Range 9kHz - 400MHz

### Highlights:

- ◆ Very wide frequency range from 9kHz to 400MHz
- ◆ High conversion accuracy allows precise field strength measurements
- ◆ Perfect for magnetic field direction finding in combination with Spectrum Analyzers
- ◆ 2 passive and 3 active versions with up to 40dB Preamplifier
- ◆ Compact Design and low weight
- ◆ 10 years warranty
- ◆ Made in Germany

**AARONIA AG**  
WWW.AARONIA.DE

Made in Germany





MDF Antenna mounted on mini-tripod (included in delivery)

## Compact, inexpensive, directional and highly sensitive

Aronia presents the new, high quality magnetic field tracking antennas of the MDF series, suitable for signal tracking and field strength measurement. Available in 5 different versions (2 passive, 3 active), the MDF covers an extremely broad frequency range from 9kHz to 400MHz.

Together with the MDF antennas, any regular Spectrum Analyzer transforms into a Magnetic Field Meter with tracking function in a few simple steps.

The special conversion factor of the MDF, in conjunction with a Power Meter showing dBm values, gives a direct dBA/m display with correct sign (power meter function).

Thanks to the high directionality of the antenna, the MDF is ideally suited for signal direction finding. This predestines the MDF to use as a radio direction finder or to locate illegal or unwanted interference.

Designed and manufactured in Germany, each MDF Antenna stands for highest quality standards. To illustrate this point every MDF offers a full 10 years warranty period.

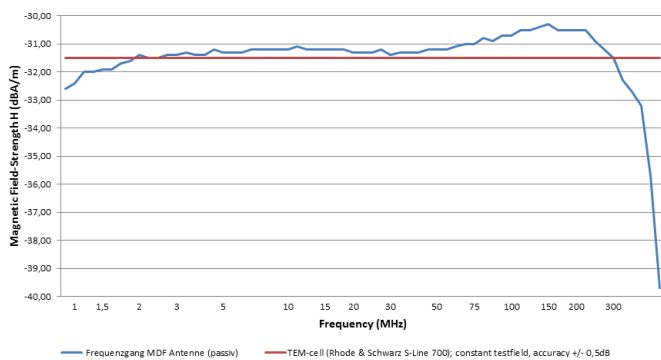
## Scope of Delivery

Included in delivery is a sturdy, waterproof carrying case with foam insert (only active (X) versions) for the antenna and accessories. Furthermore, every MDF antenna comes with a detachable pistol grip with mini tripod function.

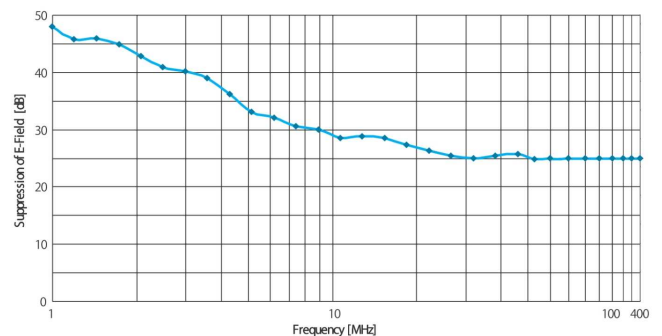


Lots of space for accessories: the watertight transport case (included in delivery with active MDF (X) versions)

## Frequency Response (Power Meter Function)



## E-Field Suppression



## MDF 560 (Passive)

- ◆ Frequency range: **500kHz - 60MHz**  
(1MHz - 40MHz with max. +/- 0,3dB deviation)
- ◆ Max. input level: **5W** (usable as transmitting antenna)
- ◆ Conversion factor: 1 (0 dB A/m is 0dBm)
- ◆ Impedance: 50 Ohm
- ◆ RF connection: SMA (female)
- ◆ Temperature range: - 40°C to +60°C
- ◆ Dimensions (L/W/D): 180 x 180 x 50 mm
- ◆ Weight: 180g
- ◆ Incl. Pistol grip with mini tripod function
- ◆ **Warranty: 10 years**

## MDF 9400 (Passive)

- ◆ Frequency range: **9kHz - 400MHz**  
(1MHz - 40MHz with max. +/- 0,3dB deviation)
- ◆ Max. input level: **5W** (usable as transmitting antenna)
- ◆ Conversion factor: 1 (0 dB A/m is 0dBm)
- ◆ Impedance: 50 Ohm
- ◆ RF connection: SMA (female)
- ◆ Temperature range: - 40°C to +60°C
- ◆ Dimensions (L/W/D): 180 x 180 x 50 mm
- ◆ Weight : 180g
- ◆ Incl. Pistol grip with mini tripod function
- ◆ **Warranty: 10 years**

## MDF 930X (Active)

- ◆ Frequency range: **9kHz - 30MHz**  
(1MHz - 25MHz with max. +/- 0,5dB deviation)
- ◆ Incl. **35dB Preamp** with Battery & USB Charger
- ◆ Impedance: 50 Ohm
- ◆ RF connection: SMA (female)
- ◆ Temperature range: - 40°C to +60°C
- ◆ Dimensions (L/W/D): 180 x 180 x 85 mm
- ◆ Weight : 360g
- ◆ Incl. Pistol grip and waterproof carrying case
- ◆ **Warranty: 10 years**

## MDF 960X (Active)

- ◆ Frequency range: **9kHz - 60MHz**  
(1MHz - 40MHz with max. +/- 1,0dB deviation)
- ◆ Incl. **25dB Preamp** with Battery & USB Charger
- ◆ Impedance: 50 Ohm
- ◆ RF connection: SMA (female)
- ◆ Temperature range: - 40°C to +60°C
- ◆ Dimensions (L/W/D): 180 x 180 x 85 mm
- ◆ Weight : 360g
- ◆ Incl. Pistol grip and waterproof carrying case
- ◆ **Warranty: 10 years**

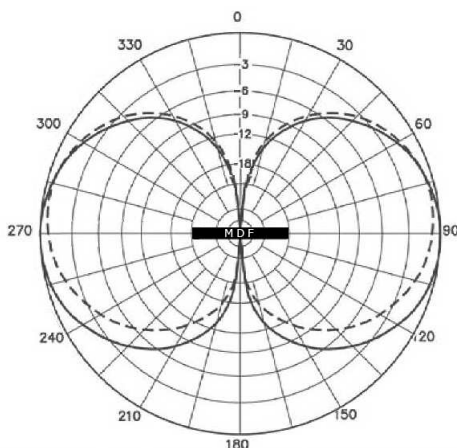
## MDF 50400X (Active)

- ◆ Frequency range: **500kHz - 400MHz**  
(1MHz - 40MHz with max. +/- 1,0dB deviation)
- ◆ Incl. **40B Preamp** with Battery & USB Charger
- ◆ Impedance: 50 Ohm
- ◆ RF connection: SMA (female)
- ◆ Temperature range: - 40°C to +60°C
- ◆ Dimensions (L/W/D): 180 x 180 x 85 mm
- ◆ Weight : 360g
- ◆ Incl. Pistol grip and waterproof carrying case
- ◆ **Warranty: 10 years**

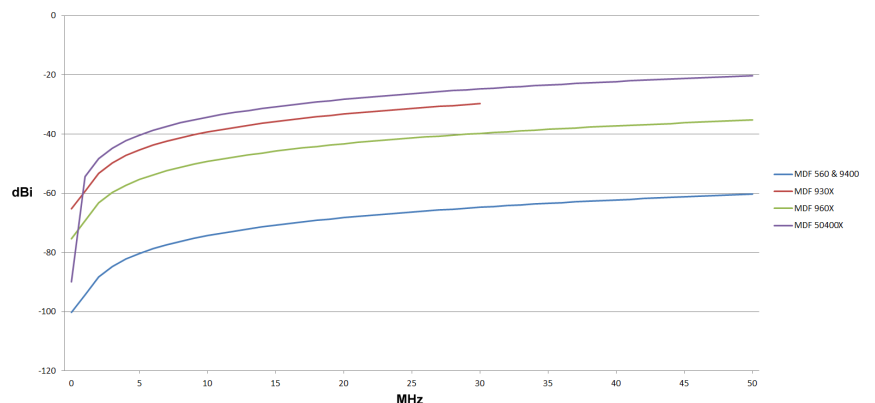


Passive Version

Active (X) Version with Preamplifier



Typ. Antenna Pattern



Magnetic Field only

Antenna Gain

# Recommended accessories for Aaronia Antennas

## Heavy multifunctional Pistol Grip

Highly stable multi-functional pistol grip with a variety of functions such as:

- 360 ° head rotation with degree indicator
- Integrated spirit level
- 90 ° and 45 ° tilt (ideam the perfect alignment of the polarization planes)
- Tripod connection 1/4 "and 3/8"
- Quick Release Plate
- Panoramic head

Order/Art.-No.: 282



## SMA to N Adapter

This special high quality adapter, in combination with Aaronia SMA cables, allows operation of MDF Antennas with any spectrum-analyzer with N connector.

Especially massive, chrome-plated design. This adapter is usable for very high frequencies up to at least 18GHz. Physical dimensions are just 30x20mm. Nominal impedance 50 Ohms. Layout: SMA socket (female) / N plug (male).

Order/Art.-No.: 770



## 1m / 5m / 10m SMA-Cable

High quality SMA cable for connecting any MDF Antenna with various test equipment like SPECTRAN Spectrum-Analyzer. You can choose between 3 different cables:

- 1m standard SMA cable (RG316U)
- 5m LowLoss SMA cable (especially low damping)
- 10m LowLoss SMA cable (especially low damping)

All versions: SMA plug (male) / SMA plug (male)

Order/Art.-No.: 771 (1m Cable), 772 (5m Cable), 773 (10m Cable)



## 1m / 5m / 10m SMA cable with thumb wheel / screw aid

Same as above but with additional extremely convenient screw aid for easy installation of the cable without additional tools!

All versions: SMA plug (male) / SMA plug (male)

Order/Art.-No.: 771X (1m Cable), 772X (5m Cable), 773X (10m Cable)



# References

## User of Aeronia Antennas and Spectrum Analyzers (Examples)

### Government, Military, aeronautic, astronautic

- ◆ NATO, Belgien
- ◆ Boeing, USA
- ◆ Airbus, Hamburg
- ◆ Bund (Bundeswehr), Leer
- ◆ Bundeswehr (Technische Aufklärung), Hof
- ◆ Lufthansa, Hamburg
- ◆ DLR (Deutsches Zentrum für Luft- und Raumfahrt, Stuttgart)
- ◆ Eurocontrol (Flugüberwachung), Belgien
- ◆ Australian Government Department of Defence, Australien
- ◆ EADS (European Aeronautic Defence & Space Company) GmbH, Ulm
- ◆ Institut für Luft- und Raumfahrtmedizin, Köln
- ◆ Deutscher Wetterdienst, Tauche
- ◆ Polizeipräsidium, Bonn
- ◆ Landesamt für Umweltschutz Sachsen-Anhalt, Halle
- ◆ Zentrale Polizeitechnische Dienste, NRW
- ◆ Bundesamt für Verfassungsschutz, Köln
- ◆ BEV (Bundesamt für Eich- und Vermessungswesen)

### Research/Development, Science and Universitys

- ◆ Deutsches Forschungszentrum für Künstliche Intelligenz, Kaiserslautern
- ◆ Universität Freiburg
- ◆ Indonesien Institute of Science, Indonesien
- ◆ Max-Planck-Institut für Polymerforschung, Mainz
- ◆ Los Alamos National Laboratory, USA
- ◆ University of Bahrain, Bahrain
- ◆ University of Florida, USA
- ◆ Universität Erlangen, Erlangen
- ◆ Universität Hannover, Hannover
- ◆ University of Newcastle, Großbritannien
- ◆ Universität Strasbourg, Frankreich
- ◆ Universität Frankfurt, Frankfurt
- ◆ Uni München – Fakultät für Physik, Garching
- ◆ Technische Universität Hamburg, Hamburg
- ◆ Max-Planck Institut für Radioastronomie, Bad Münstereifel
- ◆ Max-Planck-Institut für Quantenoptik, Garching
- ◆ Max-Planck-Institut für Kernphysik, Heidelberg
- ◆ Max-Planck-Institut für Eisenforschung, Düsseldorf
- ◆ Forschungszentrum Karlsruhe, Karlsruhe

### Industry

- ◆ Shell Oil Company, USA
- ◆ ATI, USA
- ◆ Fedex, USA
- ◆ Walt Disney, Kalifornien, USA
- ◆ Agilent Technologies Co. Ltd., China
- ◆ Motorola, Brasilien
- ◆ IBM, Schweiz
- ◆ Audi AG, Neckarsulm
- ◆ BMW, München
- ◆ Daimler Chrysler AG, Bremen
- ◆ BASF, Ludwigshafen
- ◆ Deutsche Bahn, Berlin
- ◆ Deutsche Telekom, Weiden
- ◆ Siemens AG, Erlangen
- ◆ Rohde & Schwarz, München
- ◆ Infineon, Österreich
- ◆ Philips Technologie GmbH, Aachen
- ◆ ThyssenKrupp, Stuttgart
- ◆ EnBW, Stuttgart
- ◆ RTL Television, Köln
- ◆ Pro Sieben – SAT 1, Unterföhring
- ◆ Channel 6, Großbritannien
- ◆ WDR, Köln
- ◆ NDR, Hamburg
- ◆ SWR, Baden-Baden
- ◆ Bayerischer Rundfunk, München
- ◆ Carl-Zeiss-Jena GmbH, Jena
- ◆ Anritsu GmbH, Düsseldorf
- ◆ Hewlett Packard, Dornach
- ◆ Robert Bosch GmbH, Plochingen
- ◆ Mercedes Benz, Österreich
- ◆ EnBW Kernkraftwerk GmbH, Neckarwestheim
- ◆ AMD, Dresden
- ◆ Infineon Technologies, Regensburg
- ◆ Intel GmbH, Feldkirchen
- ◆ Philips Semiconductors, Nürnberg
- ◆ Hyundai Europe, Rüsselsheim
- ◆ Saarschmiede GmbH, Völklingen
- ◆ Wilkinson Sword, Solingen
- ◆ IBM Deutschland, Stuttgart
- ◆ Vattenfall, Berlin
- ◆ Fraport, Frankfurt