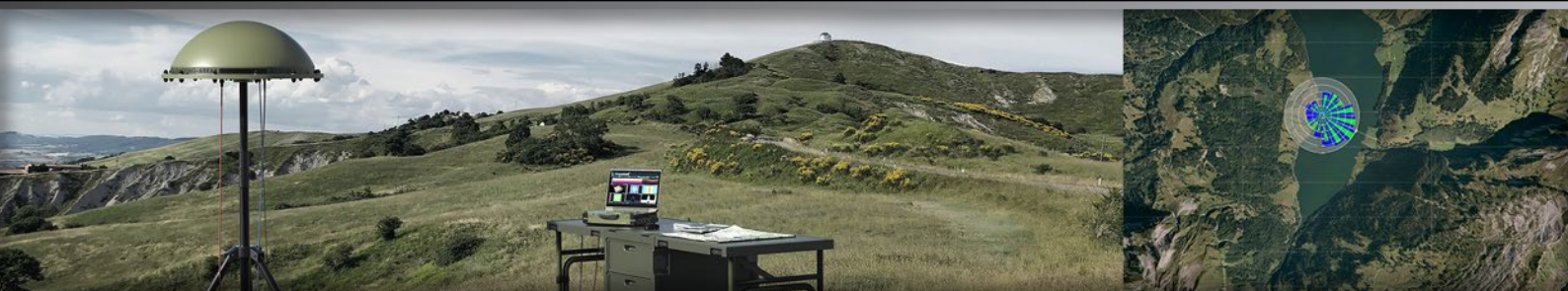


360° TRACKING ANTENNA ARRAY

ISOLOG® 3D DF

(400 MHz – 8 GHz)

3D Wideband Direction Finding Antenna for Real-Time Spectrum Monitoring



- ✓ 3D Direction Finding Tracking Array
- ✓ 360° Coverage
- ✓ Up to 8 μ s Tracking Speed

- ✓ Frequency Range of 400 MHz – 8 GHz
- ✓ Extremely High Tracking accuracy of 1-3°
- ✓ Real-Time Clock and opt. GPS



Highlights

- ✓ World's first 400 MHz* to 8 GHz 3D direction finding antenna array
- ✓ Extremely high tracking accuracy (up to 1° if used with Aaronia spectrum analyzers)
- ✓ Provides 360° coverage without mechanical rotation
- ✓ Superfast tracking speed (up to 8 μ s)**
- ✓ Very high third-order intercept point (IP3) of 40 dBm (with pre-amp in bypass mode)
- ✓ Digital RF switches – high-end, glitch-free, no mechanical parts
- ✓ Ideal for ultra-wideband, real-time spectrum monitoring
- ✓ Can be used as stand-alone or multi-device / grid system
- ✓ Real-time clock and optional GPS
- ✓ Fully customizable and cascable system (8 to 32 independent antennas)
- ✓ Suitable for harsh environments (-30° C to +60° C)
- ✓ Waterproof (IP65 certified)
- ✓ Perfect for vehicle mounting
- ✓ Plug and Play: Cable included with all parts
- ✓ Made in Germany

* Directional from 700 MHz

** For this option, a SPECTRAN® V6 device and the RTSA-Suite PRO software with specific keys are also required.



Aaronia IsoLOG® 3D DF

Wide-area, multi-direction finding and RF tracking antenna

Aaronia's IsoLOG® 3D DF provides cost-effective high performance real-time signals monitoring, direction finding and geolocation for spectrum-critical areas. The 3D RF Tracking Antenna includes a high density, customizable antenna array. A total of at least 16 and up to 32 tracking-antennas, for horizontal and for vertical polarization, can be integrated.



The Industry Standard in Accuracy and Speed

Both the antenna and its electronics are protected by a radome (included), available in any RAL color and with optional prints (standard shipping color is white). The radome is waterproof, shock- and heat-proof – in other words, it is extremely durable and reliable even in the most adverse conditions.

The IsoLOG® 3D DF is thus the perfect solution for countersurveillance measurements as well as the detection of drones or UAVs (unmanned aerial vehicles). The wide frequency range makes multiple antenna setups obsolete, therefore saving space and system costs at the same time. Having just one antenna also makes the IsoLOG® 3D DF ideal for vehicle mounting (e.g. automotive prototypes etc.) and for hidden operations. In addition, as the antenna resembles a satellite dish for camping vans, it is hardly recognizable as special equipment, let alone a tracking device.

The IsoLOG® 3D DF is sensitive to the majority of incoming signal polarizations, including all linear polarizations. This allows for highly reliable signal detection – even those invisible to most DF systems that consist of vertically polarized antennas only.

Modular and Flexible Deployment

Each IsoLOG® 3D DF ships complete with a robust radome designed for the most hostile conditions. Close coupling of the IsoLOG® and antenna modules reduces both cable run and cable loss, and significantly improves performance at higher frequencies.

Over large distances, arrays can form a network as part of a wider monitoring network with other IsoLOG® antennas. It can be set up anywhere, be it on paved roads or dirt tracks.



Antenna Versions

IsoLOG® 3D DF 80



8 sectors with 16 antennas

Frequency range: 400 MHz* to **8 GHz**

Tracking accuracy (line of sight): **4 to 6°**

IsoLOG® 3D DF 160



16 sectors with 32 antennas

Frequency range: 400 MHz* to **8 GHz**

Tracking accuracy (line of sight): **1 to 3°**

Frequency Range

Standard	400 MHz* to 8 GHz
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Additional Options

Internal GPS Receiver	Optional
Internal Low-Noise Pre-Amplifiers	Yes (included)
Customized Color (RAL Table)	Yes (standard - white)

Measurements & Operating Specifications

Operating Temperature	-30° to +60° C (-22° to 140° F)
Storage Temperature	-40° to 70° C (-40° to 158° F)
Dimensions [W x H x D]	960 x 960 x 380 mm
Weight	approx. 22 kg
RF Output	N (50 Ohm)
Certificates	IP65 (waterproof)

Frequency Range

Standard	400 MHz* to 8 GHz
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Additional Options

Internal GPS Receiver	Optional
Internal Low-Noise Pre-Amplifiers	Yes (included)
Customized Color (RAL Table)	Yes (standard - white)

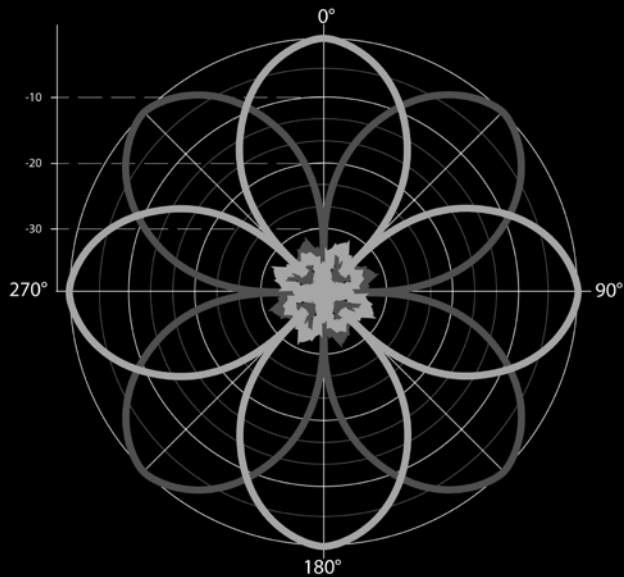
Measurements & Operating Specifications

Operating Temperature	-30° to +60° C (-22° to 140° F)
Storage Temperature	-40° to 70° C (-40° to 158° F)
Dimensions [W x H x D]	960 x 960 x 380 mm
Weight	approx. 25 kg
RF Output	N (50 Ohm)
Certificates	IP65 (waterproof)

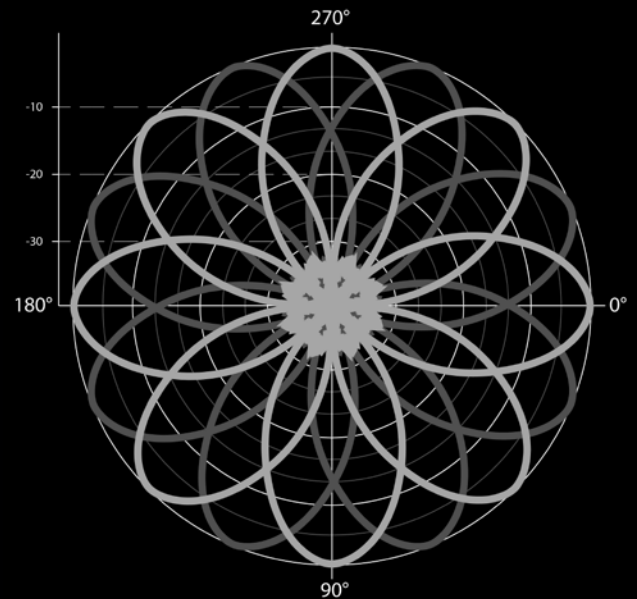
* Directional from 700 MHz

Typical Antenna Pattern

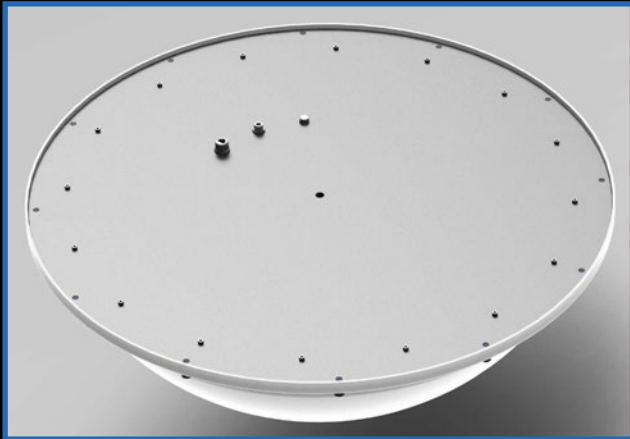
IsoLOG® 3D DF 80



IsoLOG® 3D DF 160

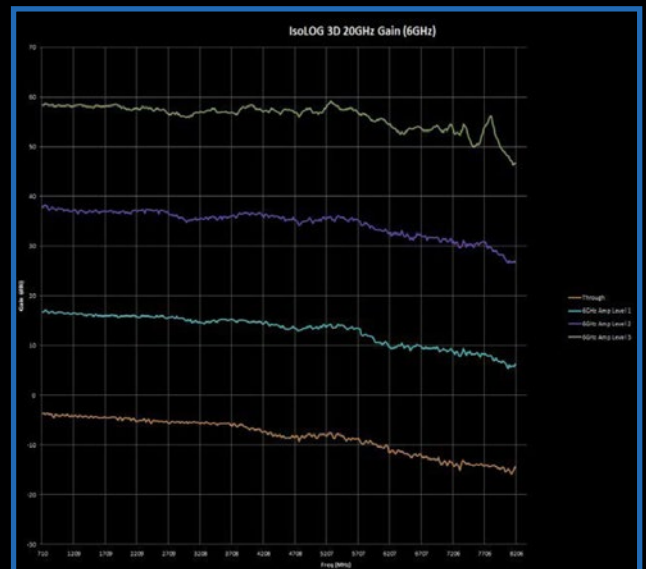


Connectors and Gain



Mounting Plate & Connectors

The picture above shows the standard positions of the RF output, the Ethernet connector and mounting holes. The design of the antenna's mounting plate can be changed according to customers' needs. Please contact us at mail@aaronia.de for further details.



Typical Gain

The above diagram shows the typical gain of the IsoLOG® 3D DF 80, with and without activated internal pre-amplifiers.

References

Selected Aaronia Clients



Government, Military, Aeronautic, Astronautic

- NATO, Belgium
- Department of Defense, USA
- Department of Defense, Australia
- Airbus, Germany
- Boeing, USA
- Bundeswehr, Germany
- NASA, USA
- Lockheed Martin, USA
- Lufthansa, Germany
- DLR, Germany
- Eurocontrol, Belgium
- EADS, Germany
- DEA, USA
- FBI, USA
- BKA, Germany
- Federal Police, Germany
- Ministry of Defense, Netherlands

Research/Development, Science and Universities

- MIT – Physics Department, USA
- California State University, USA
- Indonesian Institute of Sciences, Indonesia
- Los Alamos National Laboratory, USA
- University of Bahrain, Bahrain
- University of Florida, USA
- University of Victoria, Canada
- University of Newcastle, United Kingdom
- University of Durham, United Kingdom
- University Strasbourg, France
- University of Sydney, Australia
- University of Athens, Greece
- University of Munich, Germany
- Technical University of Hamburg, Germany
- Max Planck Inst. for Radio Astronomy, Germany
- Max Planck Inst. for Nuclear Physics, Germany
- Research Centre Karlsruhe, Germany

Industry

- IBM, Switzerland
- Intel, Germany
- Shell Oil Company, USA
- ATI, USA
- Microsoft, USA
- Motorola, Brazil
- Audi, Germany
- BMW, Germany
- Daimler, Germany
- Volkswagen, Germany
- BASF, Germany
- Siemens AG, Germany
- Rohde & Schwarz, Germany
- Infineon, Austria
- Philips, Germany
- Thyssenkrupp, Germany
- EnBW, Germany
- CNN, USA
- Duracell, USA
- German Telekom, Germany
- Bank of Canada, Canada
- NBC News, USA
- Sony, Germany
- Anritsu, Germany
- Hewlett Packard, Germany
- Robert Bosch, Germany
- Mercedes Benz, Austria
- Osram, Germany
- DEKRA, Germany
- AMD, Germany
- Keysight, China
- Infineon Technologies, Germany
- Philips Semiconductors, Germany
- Hyundai Europe, Germany
- VIAVI, Korea
- Wilkinson Sword, Germany
- IBM Deutschland, Germany
- Nokia Siemens Networks, Germany

