

3D 360° Tracking Antenna Array

IsoLOG 3D (9kHz to 40GHz)

Ultra Wideband, Real-Time Spectrum Monitoring and Direction Finding



High Tracking Accuracy

Extremely Fast Tracking-Speed (up to 1 μ S)

Including Control Software

Highlights

- ✓ Worlds first 9kHz to 40GHz 3D DF antenna array
- ✓ High tracking-accuracy (up to 2° if used with Aaronia spectrum analyzers)
- ✓ Provide 360° coverage without mechanical rotation
- ✓ Super fast tracking-speed (up to 1GS)
- ✓ Very high IP3 of 40dBm (pre-amp in bypass mode)
- ✓ Glitch free high-end digital RF-switches (no mechanical parts)
- ✓ Suitable 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, cascadable system (16 to 64 independent antennas)
- ✓ Suitable for harsh environments (-30° to 60° C)
- ✓ Perfect for vehicle mounting
- ✓ Easy to use PC control-software (via Ethernet) included
- ✓ PoE (Power over Ethernet) power feed (no extra power supply needed)
- ✓ Plug and Play: All parts incl. cable, PoE and software included
- ✓ Made in Germany



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MADE IN GERMANY

Aaronia IsoLOG 3D

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

Aaronia's IsoLOG 3D 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 48 tracking-antennas, for horizontal and for vertical polarization, can be integrated. Additionally 8 or 16 specialized low frequency antennas can be added to extend the frequency range down to 9kHz. In total up to 64 independent antennas can be equipped.

Class-leading accuracy and speed

The antennas and the electronic is protected by a included radom which can be ordered in any color and optional prints (standard color is black). The radom is watertight, shock- and heat-proofed to withstand even hardest conditions.



The perfect solution for counter-surveillance measurements or drone-detectionsystems (unmanned air vehicle). The wide frequency range eliminates the need of various antenna setups to save space and system cost. This makes it usable for mounting on vehicles (e.g. drive test cars etc.) and for hidden operations. Looking like a satellite dish for camping vans the antenna is not recognized as a tracking antenna.

The IsoLOG 3D is sensitive to the majority of incoming signal polarizations including all linear polarizations, allowing reliable detection of signals including those invisible to most DF systems that use only vertically polarized antennas.

Power and Software

The antenna only needs a Power-over-Ethernet (PoE) connection for easy integration and control over any existing Ethernet-network. A powerful control software is included for free, for operation on Windows systems. The control software allows various tracking and selection setups, e.g. sweep all antennas horizontal or/and vertical, switch all in one sector and a powerfull high speed „chopper mode“. This makes it the right tool to track signals in no time.

Modular and flexible deployments

Each IsoLOG 3D is fully self-contained within a robust radome designed for hostile conditions. Close coupling of the IsoLOG and antenna modules reduces cable runs and cable losses and significantly improves performance at higher frequencies. Various directional antenna options are available from 9kHz to 40GHz.

Arrays can be networked over large distances as part of a wider monitoring network with other IsoLOG antennas. compact and flexible. It can be set up at any place you need to control.



Antenna Versions

IsoLOG 3D 80



8 sectors with 16 antennas

Frequency range: 680MHz to **6 GHz**

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

IsoLOG 3D 160



16 sectors with 32 antennas

Frequency range: 680MHz to **6 GHz**

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

Frequency range

Standard	680MHz to 6GHz
VLF Extender to 9kHz (option)	Yes
SHF Extender to 20GHz (option)	Yes

Additional Options

Internal GPS receiver	Yes
Internal low-noise pre-amplifier	Yes (included)
Customized color (RAL table)	Yes (standard - white)

Mechanical & Environmental

Operating temperature	-30 to +60°C (-22 to 140° F)
Storage temperature	-40 to 70°C (-40 to 158°F)
Dimensions	950 x 950 x 300mm
Weight	approx. 20kg
RF Output	N female (SMA via Adapter)
Warranty	2 years

Frequency range

Standard	680MHz to 6GHz
VLF Extender to 9kHz (option)	Yes
SHF Extender to 20GHz (option)	Yes

Additional Options

Internal GPS receiver	Yes
Internal low-noise pre-amplifier	Yes (included)
Customized color (RAL table)	Yes (standard - white)

Mechanical & Environmental

Operating temperature	-30 to +60°C (-22 to 140° F)
Storage temperature	-40 to 70°C (-40 to 158°F)
Dimensions	950 x 950 x 300mm
Weight	approx. 22kg
RF Output	N female (SMA via Adapter)
Warranty	2 years

Antenna Versions

IsoLOG 3D 80-UWB



8 sectors with 24 antennas
 Frequency range: 9kHz to **6 GHz**
 Tracking accuracy (line of sight): **4 to 6°**

IsoLOG 3D 160-UWB



16 sectors with 48 antennas
 Frequency range: 9kHz to **6 GHz**
 Tracking accuracy (line of sight): **1 to 3°**

Frequency range

Standard	9kHz to 6GHz
VLF Extender to 9kHz (option)	Included
SHF Extender to 20GHz (option)	Yes

Additional Options

Internal GPS receiver	Yes
Internal low-noise pre-amplifier	Yes (included)
Customized color (RAL table)	Yes (standard - white)

Mechanical & Environmental

Operating temperature	-30 to +60°C (-22 to 140° F)
Storage temperature	-40 to 70°C (-40 to 158°F)
Dimensions	950 x 950 x 300mm
Weight	approx. 21kg
RF Output	N female (SMA via Adapter)
Warranty	2 years

Frequency range

Standard	9kHz to 6GHz
VLF Extender to 9kHz (option)	Included
SHF Extender to 20GHz (option)	Yes

Additional Options

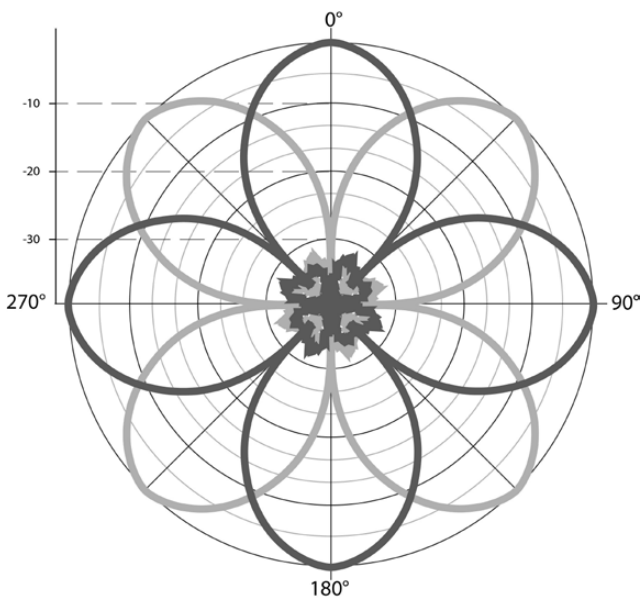
Internal GPS receiver	Yes
Internal low-noise pre-amplifier	Yes (included)
Customized color (RAL table)	Yes (standard - white)

Mechanical & Environmental

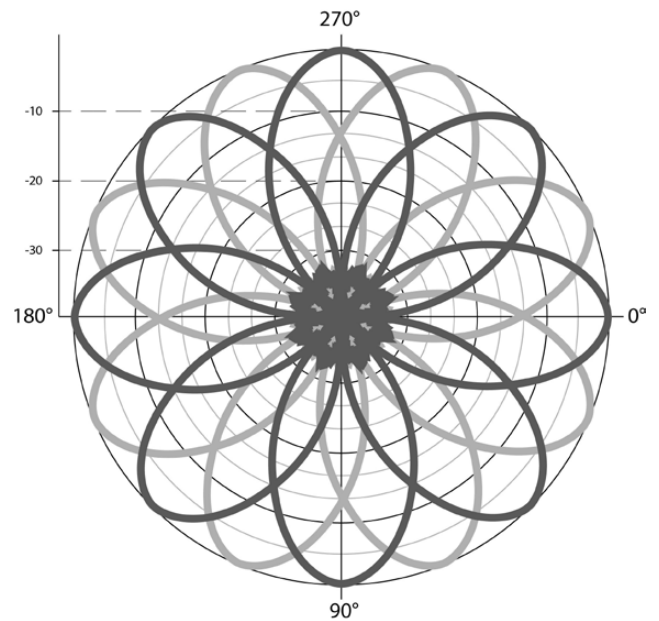
Operating temperature	-30 to +60°C (-22 to 140° F)
Storage temperature	-40 to 70°C (-40 to 158°F)
Dimensions	950 x 950 x 300mm
Weight	approx. 23kg
RF Output	N female (SMA via Adapter)
Warranty	2 years

Typical Antenna Pattern

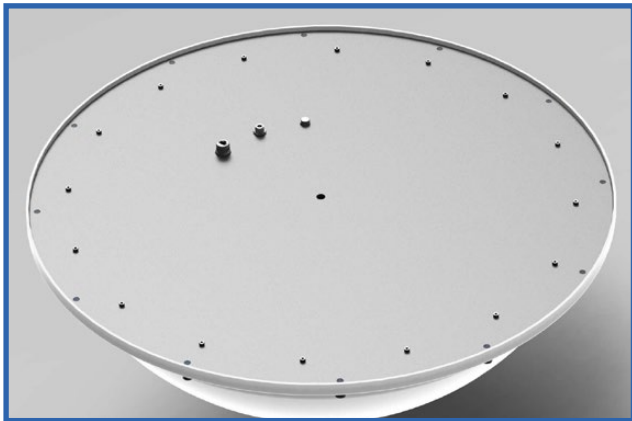
IsoLOG 3D 80 & 80-UWB



IsoLOG 3D 160 & 160-UWB



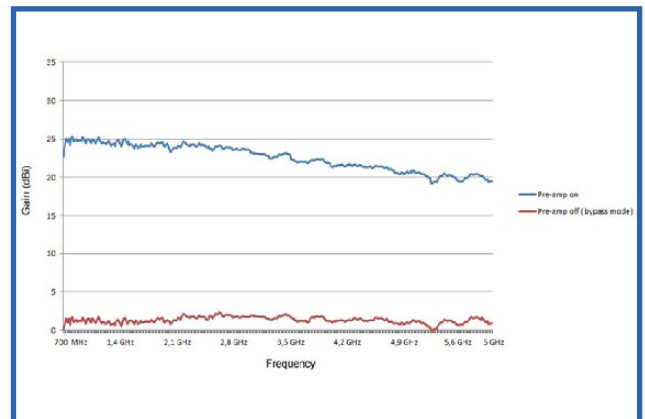
Connectors and Gain



Mounting Plate & Connectors

The picture shows the standard positions of the RF Output, Ethernet connector and mounting holes.

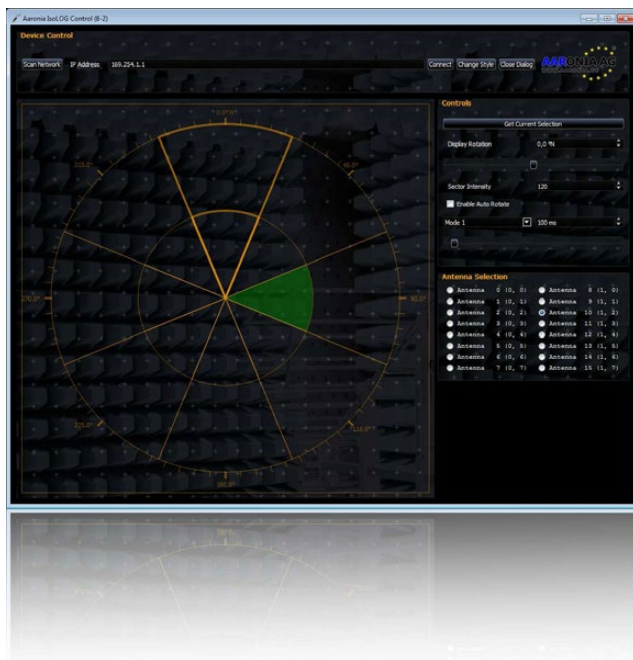
The design of the antenna's mounting plate can be changed upon the requirements of the user.



Typical Gain

The above picture shows the typical gain of the IsoLOG 3D 80, with and without activated internal pre-amplifier.

Control Software

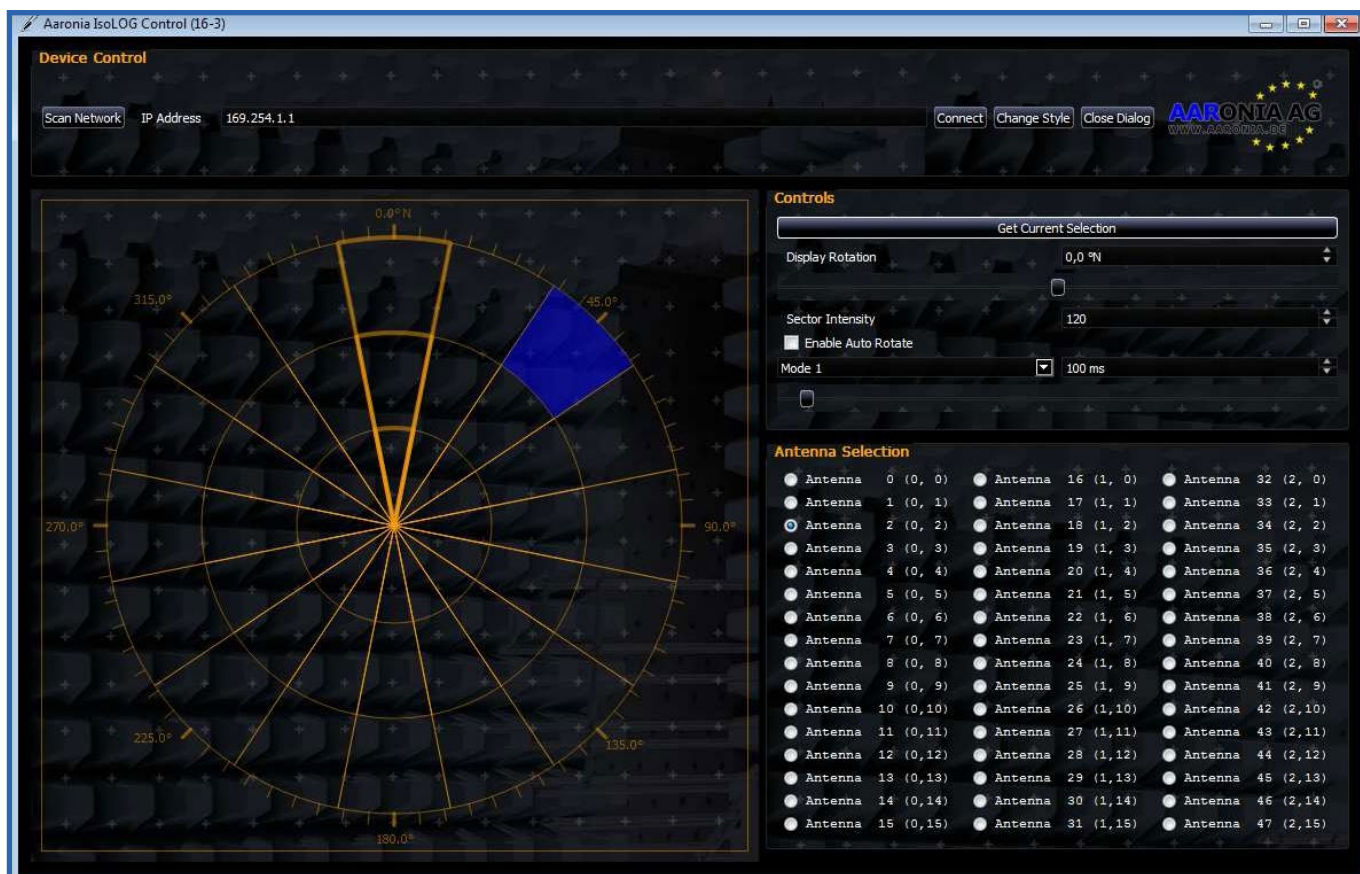


An easy to use Remote-Control-Software is included in the shipment and allows to control the Tracking-Array via any Windows PC with Ethernet-Connector.

Free, included Software

The powerful software allows to manually switch between each antenna and/or sector (manually RF tracking). The software also includes a programmable sector/antenna auto-rotate and a ultra fast „chopper mode“ for real time isotropic measurements over all antennas/sectors at the same time. The free adjustable switching speed allows even quite slow receivers to be used together with the IsoLOG 3D, but because of the possible high switching speed we recommend the usage of a Real-Time Spectrum Analyzer.

- Auto rotate with adjustable speed and super fast „chopper mode“ („omni-directional“ measurement)
- Fast and easy antenna/sector selection for manually RF tracking
- Switch between all sectors in almost real-time (vertical, horizontal, all)
- Pre-saved and adjustable profiles for specific measurement modes



References



Cross-Section of 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
- Indonesien Institute of Science, 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 Athen, 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

- APPLE, USA
- 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
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- VIAVI, Korea
- Wilkinson Sword, Germany
- IBM Deutschland, Germany
- Nokia-Siemens Networks, Germany



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