



Rev 1.5  
04.10.2012

## Active RF Test Antennas up to 10GHz HyperLOG® 60 X Series

RF Antenna with very high gain (45dBi)

### Highlights

- ◆ **Compatible with any Spectrum Analyzer or Oscilloscope**
- ◆ Incl. High-End Preamplifier
- ◆ Ultra high gain (45dBi)
- ◆ Runs with battery or power supply
- ◆ Compact and sturdy design
- ◆ Can be used in the lab and for open-field application
- ◆ Made in Germany
- ◆ **10 years warranty**

### Application examples

- ◆ The HyperLOG X LogPer antenna series can be used to locate extremely weak signals, thanks to the integrated preamplifier. The antenna offers excellent directional characteristics which can be optimized using the optional Laser and Compass.
- ◆ Using the optional, heavy aluminum pistol grip significantly simplifies the rf bearing. It allows an easy adjustment of the polarization planes in 45° steps.
- ◆ The antenna can also be used in a passive-mode by removing the preamplifier.

### Included in delivery

- ◆ HyperLOG® 60... X active antenne
- ◆ Typical calibration datas with up to 963 calibration points (10MHz-steps)
- ◆ **Integrated preamplifier (removable)** with integrated battery & power supply
- ◆ Aluminum transport case with protection foam
- ◆ Rugged, screwable pistol grip with mini tripod functionality
- ◆ Aaronia special SMA tool



Made in Germany

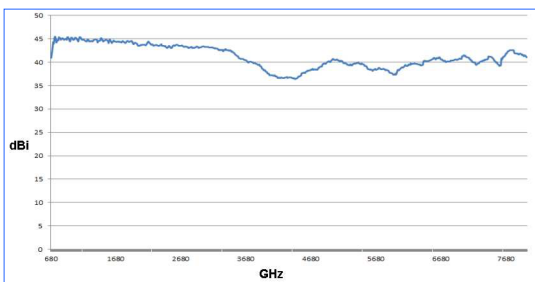


# Specifications

## HyperLOG® 6080 X:

- ◆ Design: active logger
- ◆ Frequency range: **680MHz-8GHz**  
(down to 100MHz with limited directivity)
- ◆ Preamp noise : „linear“ increasing, 100MHz: 3,5dB, 3GHz: 4dB, 6GHz: 4,5dB
- ◆ Preamp gain (typ.): „linear“ falloff, 1MHz: 40dB; 3GHz: 37,5dB; 6GHz: 35dB
- ◆ Nominal impedance: 50 Ohm
- ◆ VSWR (typ.): <1:2
- ◆ Gain (typ.): **45dBi**
- ◆ Calibration points: **733** (10MHz steps)
- ◆ RF-connection: SMA (f) or N (see optional adapter)
- ◆ Dimensions (L/W/D): (390x200x25) mm
- ◆ Weight: 400gr
- ◆ Tripod connection: 1/4“
- ◆ Interface: USB 2.0/1.1 (readout of calibration datas)
- ◆ **Warranty: 10 years**

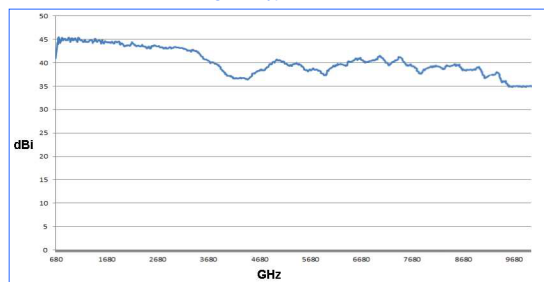
Gain diagram HyperLOG 6080X



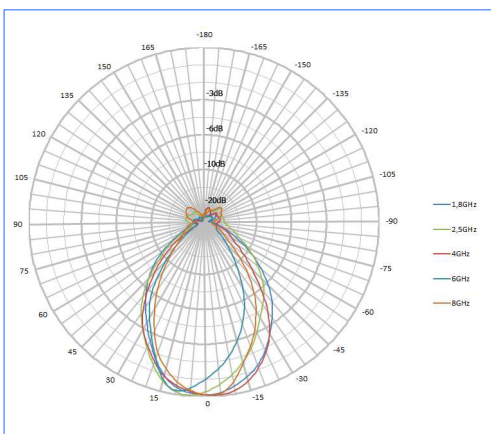
## HyperLOG® 60100 X:

- ◆ Design: active logger
- ◆ Frequency range: **680MHz-10GHz**  
(down to 100MHz with limited directivity)
- ◆ Preamp noise : „linear“ increasing, 100MHz: 3,5dB, 3GHz: 4dB, 6GHz: 4,5dB
- ◆ Preamp gain (typ.): „linear“ falloff, 1MHz: 40dB; 3GHz: 37,5dB; 6GHz: 35dB
- ◆ Nominal impedance: 50 Ohm
- ◆ VSWR (typ.): <1:2
- ◆ Gain (typ.): **45dBi**
- ◆ Calibration points: **933** (10MHz steps)
- ◆ RF-connection: SMA (f) or N (see optional adapter)
- ◆ Dimensions (L/W/D): (390x200x25) mm
- ◆ Weight: 400gr
- ◆ Tripod connection: 1/4“
- ◆ Interface: USB 2.0/1.1 (readout of calibration datas)
- ◆ **Warranty: 10 years**

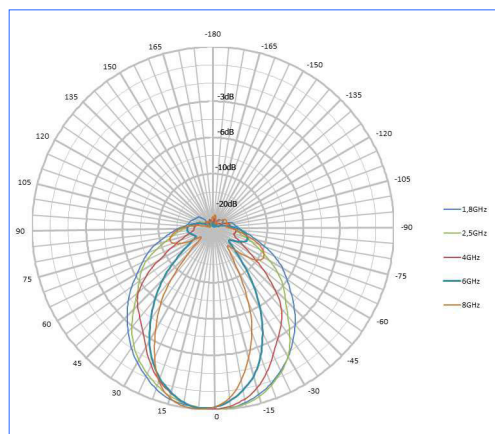
Gain diagram HyperLOG 60100X



Horizontal Pattern HyperLOG 60.. X Series



Vertical Pattern HyperLOG 60.. X Series





HyperLOG 6080X Antenna with miniature tripod (included)

The HyperLOG® antennas come standard with a specially constructed, high tech radom housing. This housing has been constructed after intense research with the most modern computer technology in such a way that its shape, material and special coating have virtually no influence on measurements, not even in case of dew or other kinds of humidity collecting on the surface. Another important factor for Aaronia was the development of a radom with the lowest possible damping factor achievable. This turned out to be quite an adventure for our development team, particularly in the high GHz ranges. Fortunately, this adventure has been mastered resulting in a beautiful, elegant design, to the complete satisfaction of the development team. Our first test measurements even by far surpassed our guidelines!

The resulting antenna had the best possible protection against mechanical stress and environmental influence without sacrificing any of its performance.



The included transport case offers lots of space for optional accessories

Aaronia offers the new standard antennas for RF direction finding relative to gain, sensitivity and functionality. This high-end but still affordable antennas find every signal, no matter how weak.

In conjunction with the HyperLOG® X-Series antennas, every regular spectrum analyser becomes a fully professional directional RF measurement device within a few moments.

The USB interface allows the readout of the precise calibration datas which offers field strength measurements or high grade EMC tests.



The optional 150mW Laser mounted on the special adapter of the HyperLOG 60100X antenna

Included in delivery is an aluminum-design transport case with protection foam for the active antenna and included accessories.

Every HyperLOG® 60... X antenna also includes an international power supply, a pistol grip with miniature tripod functionality and a SMA tool.

# Recommended accessories for Aaronia Antennas

## Heavy Plastic Carrycase PRO

Schock resistant, heavy version with padding. Offers spaces for a HyperLOG 70xx or 60xxx antenna and 2 SPECTRAN units with all accessories. A must for the professional user or outdoor usage!

Order/Art.-No.: 243



interior view

exterior view

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

High quality special SMA cable for connecting any HyperLOG®-Antenna or BicoLOG®-Antenna with various test equipment like our RF 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)



SMA Cable (1 10m)

## SMA to N Adapter

This special high quality adapter allows operation of all HyperLOG®-Antenna with any standard spectrum-analyzer with N connector. Also this adapter is needed to connect BicoLOG® antennas to a SPECTRAN Spectrum Analyzer.

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



SMA to N Adapter

## Laser / Compass

Laser for pin pointing any RF source even at bright daylight. Available as 1mW version (red Laser) or 150mW power version (green Laser). Easy to connect on top of any HyperLOG X antenna. Including connector and all needed screws.

Order/Art.-No.: 791 (150mW Laser), 792 (1mW Laser)

Small Compass Ball for HyperLOG X Antennas. Works at any antenna position due to its liquid filled ball. Can be used together with above mentioned laser or separately. Including connector and all needed screws.

Order/Art.-No.: 795



Compass



150mW Laser

## Heavy multifunctional Pistol Grip (strongly recommended!)

Highly recommend for the usage of our HyperLOG active antennas. Quick and easy change of antenna polarization, perfect antenna handling (even with the more heavy HyperLOG 40xx and 30xx series).

Order/Art.-No.: 282



Pistol Grip

# Frequency overview Analyzer & Antennas

## Frequency Overview SPECTRAN Spectrum Analyzer

| 1Hz | 10Hz                          | 100Hz | 1kHz | 10kHz | 100kHz | 1MHz | 10MHz | 100MHz | 1GHz                   | 10GHz | 100GHz |
|-----|-------------------------------|-------|------|-------|--------|------|-------|--------|------------------------|-------|--------|
|     | SPECTRAN NF-1010E             |       |      |       |        |      |       |        |                        |       |        |
|     | SPECTRAN NF-3020              |       |      |       |        |      |       |        |                        |       |        |
|     | SPECTRAN NF-5030 (opt. 30MHz) |       |      |       |        |      |       |        |                        |       |        |
|     | SPECTRAN NF-XFR (opt. 30MHz)  |       |      |       |        |      |       |        |                        |       |        |
|     |                               |       |      |       |        |      |       |        | SPECTRAN HF-2025E Rev3 |       |        |
|     |                               |       |      |       |        |      |       |        | SPECTRAN HF-4040 Rev3  |       |        |
|     |                               |       |      |       |        |      |       |        | SPECTRAN HF-4060 Rev3  |       |        |
|     |                               |       |      |       |        |      |       |        | SPECTRAN HF-6060 V4    |       |        |
|     |                               |       |      |       |        |      |       |        | SPECTRAN HF-6080 V4    |       |        |
|     |                               |       |      |       |        |      |       |        | SPECTRAN HF-60100 V4   |       |        |
|     |                               |       |      |       |        |      |       |        | SPECTRAN HF-XFR        |       |        |

## Frequency Overview HyperLOG and BicoLOG Antennas and Probes

| 1Hz                                                | 10Hz | 100Hz | 1kHz | 10kHz | 100kHz | 1MHz | 10MHz | 100MHz             | 1GHz            | 10GHz | 100GHz |     |
|----------------------------------------------------|------|-------|------|-------|--------|------|-------|--------------------|-----------------|-------|--------|-----|
|                                                    |      |       |      |       |        |      |       |                    | HyperLOG 7025   |       |        |     |
|                                                    |      |       |      |       |        |      |       |                    | HyperLOG 7025 X |       |        |     |
|                                                    |      |       |      |       |        |      |       |                    | HyperLOG 7040   |       |        |     |
|                                                    |      |       |      |       |        |      |       |                    | HyperLOG 7040 X |       |        |     |
|                                                    |      |       |      |       |        |      |       |                    | HyperLOG 7060   |       |        |     |
|                                                    |      |       |      |       |        |      |       |                    | HyperLOG 7060 X |       |        |     |
|                                                    |      |       |      |       |        |      |       |                    | HyperLOG 6030   |       |        |     |
|                                                    |      |       |      |       |        |      |       |                    | HyperLOG 6030 X |       |        |     |
|                                                    |      |       |      |       |        |      |       |                    | HyperLOG 60100  |       |        |     |
|                                                    |      |       |      |       |        |      |       |                    | HyperLOG 60180  |       |        |     |
|                                                    |      |       |      |       |        |      |       |                    | HyperLOG 4025   |       |        |     |
|                                                    |      |       |      |       |        |      |       |                    | HyperLOG 4025 X |       |        |     |
|                                                    |      |       |      |       |        |      |       |                    | HyperLOG 4040   |       |        |     |
|                                                    |      |       |      |       |        |      |       |                    | HyperLOG 4040 X |       |        |     |
|                                                    |      |       |      |       |        |      |       |                    | HyperLOG 4060   |       |        |     |
|                                                    |      |       |      |       |        |      |       |                    | HyperLOG 4060 X |       |        |     |
|                                                    |      |       |      |       |        |      |       |                    | HyperLOG 3080   |       |        |     |
|                                                    |      |       |      |       |        |      |       |                    | HyperLOG 3080 X |       |        |     |
|                                                    |      |       |      |       |        |      |       |                    | HyperLOG 30100  |       |        |     |
|                                                    |      |       |      |       |        |      |       |                    | HyperLOG 30180  |       |        |     |
|                                                    |      |       |      |       |        |      |       | HyperLOG 20300 EMI |                 |       |        |     |
|                                                    |      |       |      |       |        |      |       | HyperLOG 20600 EMI |                 |       |        |     |
|                                                    |      |       |      |       |        |      |       |                    | OmniLOG 90200   |       |        |     |
|                                                    |      |       |      |       |        |      |       |                    | BicoLOG 5070    |       |        |     |
|                                                    |      |       |      |       |        |      |       |                    | BicoLOG 30100   |       |        |     |
|                                                    |      |       |      |       |        |      |       |                    | BicoLOG 30100E  |       |        |     |
|                                                    |      |       |      |       |        |      |       |                    | BicoLOG 20100   |       |        |     |
|                                                    |      |       |      |       |        |      |       |                    | BicoLOG 20100E  |       |        |     |
|                                                    |      |       |      |       |        |      |       |                    | BicoLOG 20300   |       |        |     |
| Aaronia EMV Probe-Set PBS1 & PBS2                  |      |       |      |       |        |      |       |                    |                 |       |        |     |
| Aaronia Active Differential Probe (NF-50xx series) |      |       |      |       |        |      |       |                    |                 |       |        |     |
| Geophon (Aaronia GEO Series)                       |      |       |      |       |        |      |       |                    |                 |       |        |     |
| subHz                                              | ELF  | SLF   | ULF  | VLF   | LF     | MF   | HF    | VHF                | UHF             | SHF   | EHF    | THF |

# References

## User of Aaronia 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 Sience, Indonesien
- ♦ Max-Planck-Institut für Polymerforschung, Mainz
- ♦ Los Alamos National Labratory, 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
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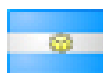
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