HDA Series

ANTENNA SERIES
PRODUCT MANUAL

HANDHELD ACTIVE DIRECTIONAL ANTENNA

HDA Series
500 MHz - 10/20 GHz

V1.1
06/24/2026

HAROGIC

HDA Series Overview.

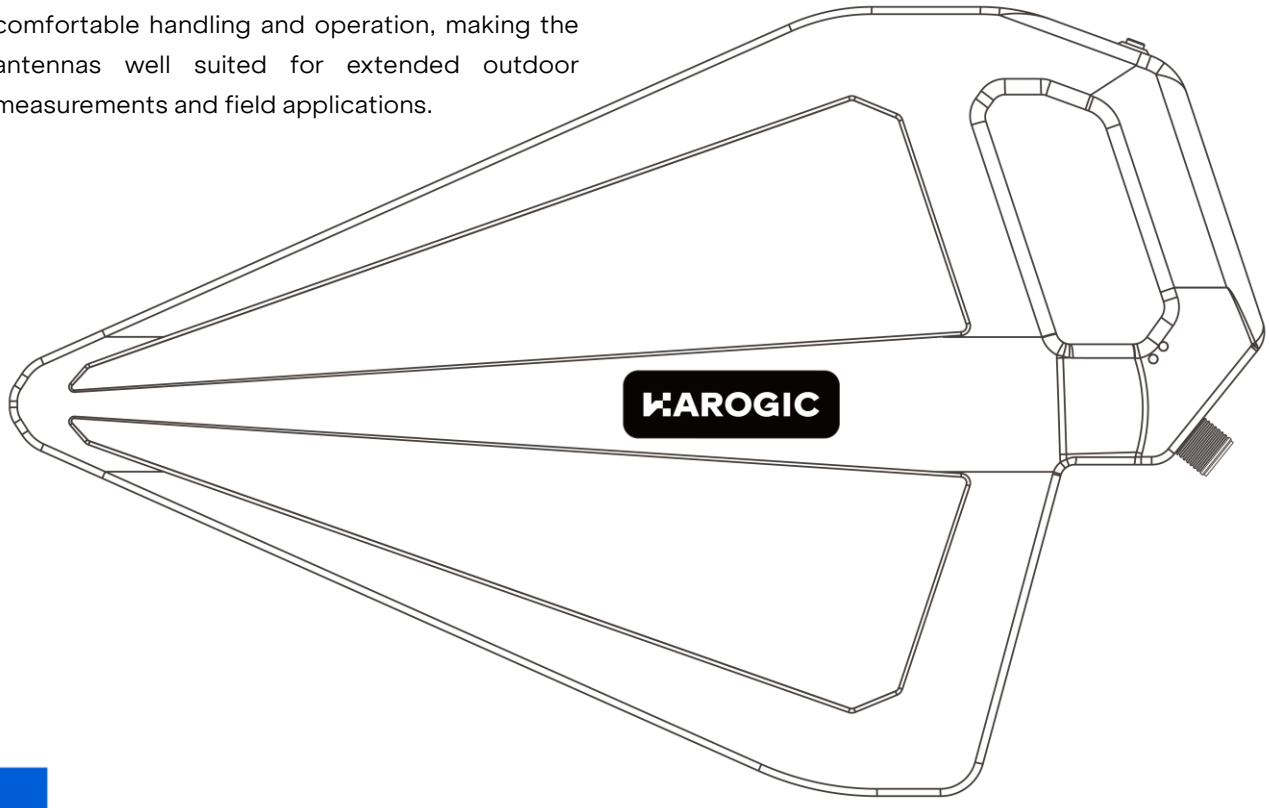
Overview

The HDA Series active directional antennas provide continuous frequencies from 500 MHz to 10/20 GHz and are suitable for a broad range of RF T&M, spectrum monitoring and interference hunting applications. High directivity supports accurate localization of signal sources. A built-in broadband amplifier enhances system sensitivity, while switchable bypass and amplification modes provide extended measurement dynamic range. The integrated Attitude and Heading Reference System delivers real-time pitch, roll, and heading information.

The HDA Series is fully compatible with HAROGIC spectrum analyzers. Antenna factors are automatically applied, and real-time azimuth, pitch, and roll information is available to support efficient measurement workflows. The lightweight enclosure and ergonomic design provide comfortable handling and operation, making the antennas well suited for extended outdoor measurements and field applications.

Key Features

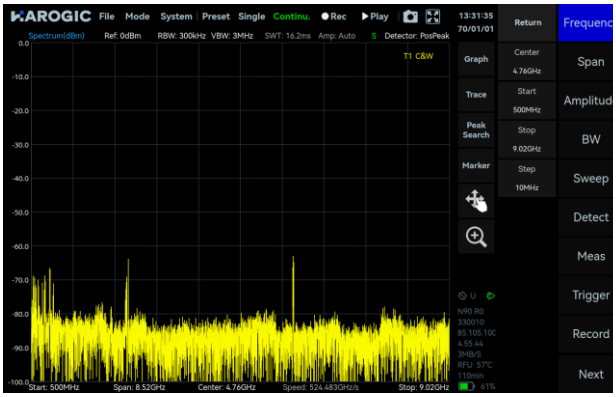
- Frequency Range: 500 MHz to 10/20 GHz
- Directional radiation pattern, typical passive gain up to 5 dBi
- Built-in high-performance broadband amplifier with manual bypass
- Typical amplifier noise figure (NF) ≤ 1.9 dB
- Integrated attitude and heading measurement system
- Compatible with full HAROGIC spectrum analyzers, automatic antenna factor loading, and real-time azimuth, pitch, roll output
- Total weight: 680 g, lightweight and portable
- Ergonomic design for long-duration handheld operation



SAStudio4 Antenna Adaptation Overview

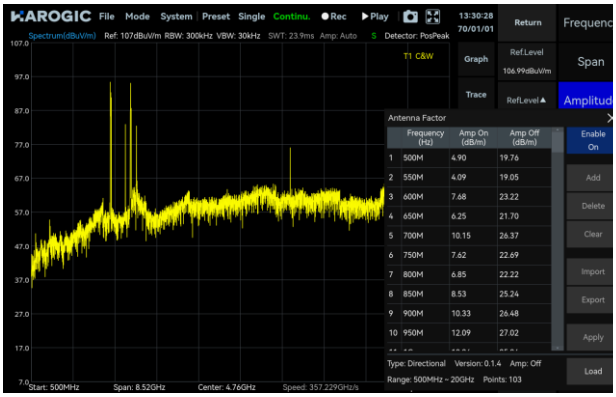
Antenna Connection Status and Working Mode Display

The SAStudio4 software supports real-time display of the antenna connection status through interface icons, and simultaneously provides feedback on the current Bypass/Amplifier working mode. This helps users quickly confirm the antenna's operating status, improving operational efficiency in on-site signal searching, interference detection, and field strength testing.



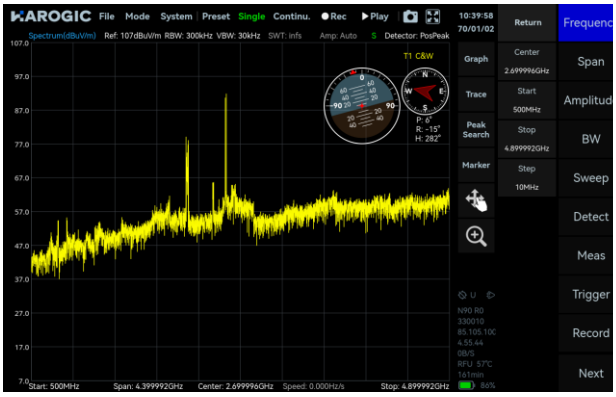
Auto Load Antenna Factor

The SAStudio4 software supports one-click loading of antenna factor files for the HDA series antennas. Users can quickly complete the parameter settings required for field strength conversion without manually importing a configuration file, greatly improving the efficiency of on-site signal searching and field strength measurement.



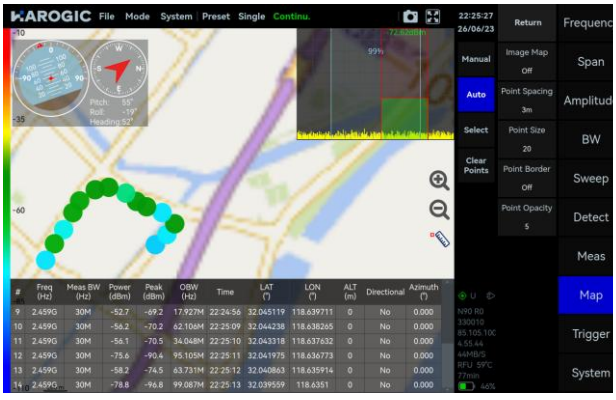
Antenna Attitude Display

The SAStudio4 software can display the antenna's azimuth, elevation, and polarization angle in real time, representing the antenna's horizontal pointing, elevation state, and receiving polarization direction changes during measurement. By combining the spectrum amplitude, field strength variations, and antenna attitude information, users can analyze signal level changes and potential signal source directions.



Mapping for Interference Detection

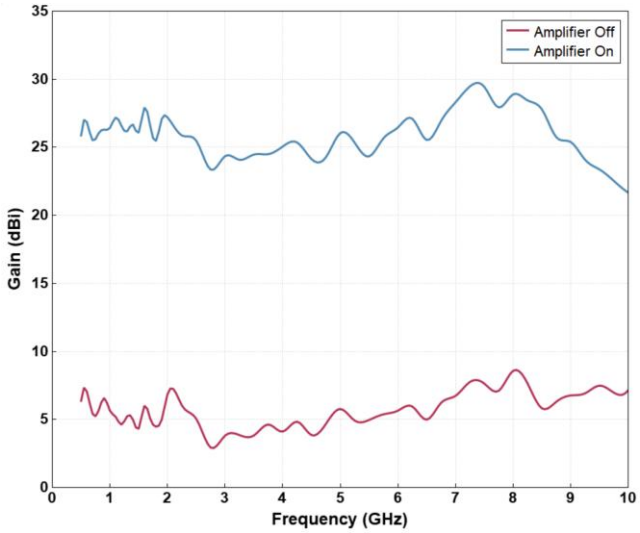
In Mapping mode, the software can generate map measurement points through real-time GNSS positioning, and intuitively display the received signal strength in different colors. When used with the HDA series handheld directional antenna and with attitude measurement enabled, the software can display the antenna's azimuth, elevation, and polarization angle simultaneously. This achieves a multi-dimensional correlation of position measurement, signal strength, and antenna attitude, facilitating users in performing signal searching, coverage analysis, and on-site interference detection.



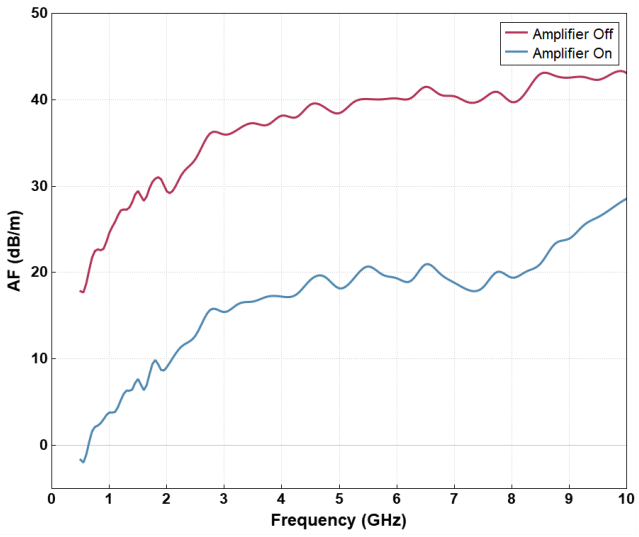
Specifications

	HDA-100	HDA-200
Frequency range	500 MHz to 10 GHz	500 MHz to 20 GHz
Half-Power beamwidth	66° @ 6 GHz	68° @ 6 GHz, 35° @ 15 GHz
Front-to-Back ratio	>15 dB	>14 dB
Gain	5 dBi, (typ.)	5 dBi @ 0.5 to 12 GHz 2.4 dBi @ 12 to 20 GHz (typ.)
Amplifier noise figure	1.5 dB (typ.)	1.9 dB (typ.)
Amplifier gain	20 dB (typ.)	16 dB (typ.)
Calibration points	191 (50 MHz step)	391 (50 MHz step)
Maximum field strength (Amp mode)	17 V/m @ 6 GHz	16 V/m @ 6 GHz 52 V/m @ 15 GHz
Polarization type	Linear	
VSWR	< 2.0 (typ.)	
Attitude and heading	Pitch, roll, heading	
RF connection	N (F), 50 Ω	
Power supply	USB Type-C; connects to host via USB Type-C to USB Type-A cable	
Dimensions (L x W x D)	430 x 270 x 35 mm	
Weight	680 g	
Angle measurement	azimuth angle: 0° to 360°, pitch angle: −180° to +180°, roll angle: −90° to +90°	

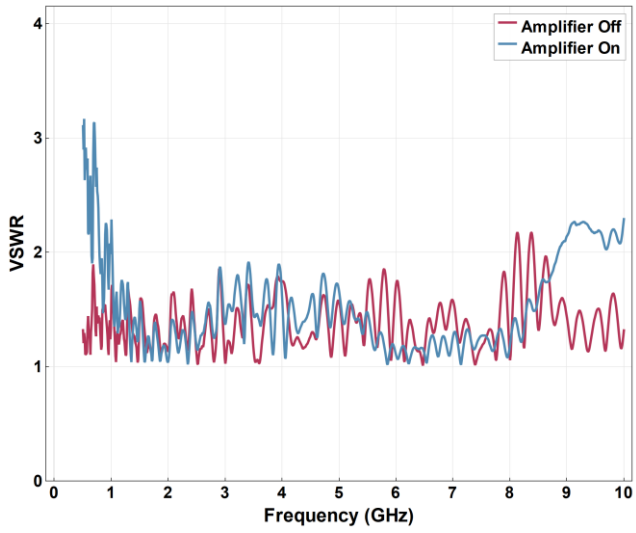
Gain, Antenna Factor, VSWR and Radiation Patterns



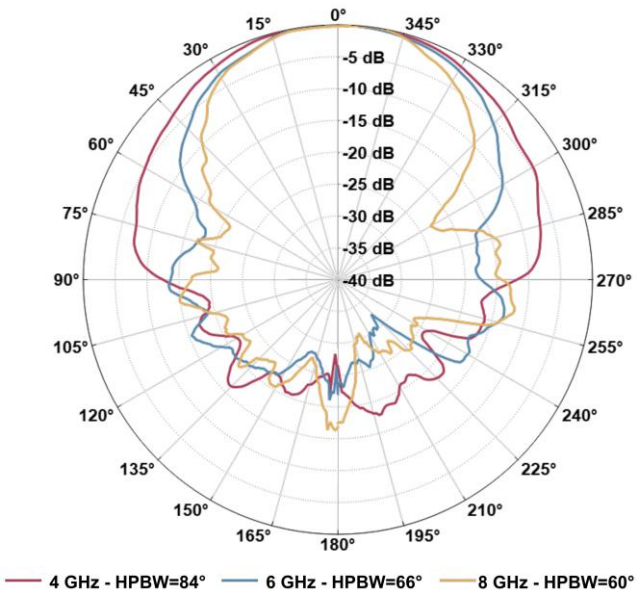
HDA-100 Gain



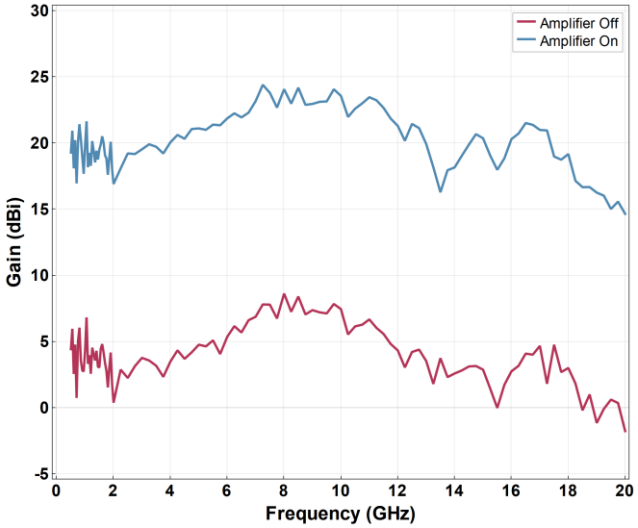
HDA-100 Antenna Factor



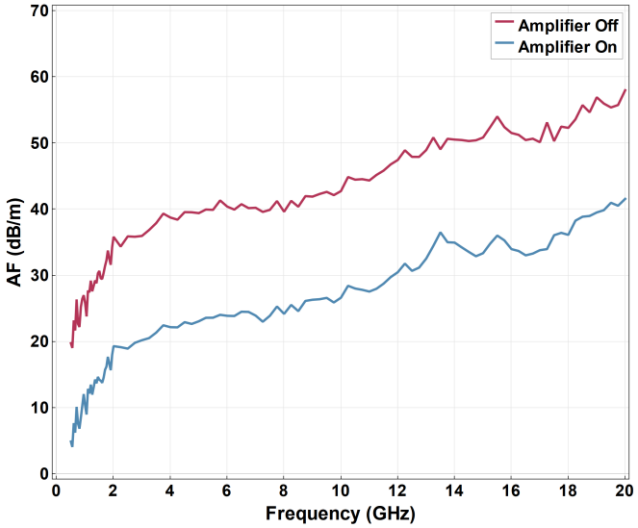
HDA-100 VSWR



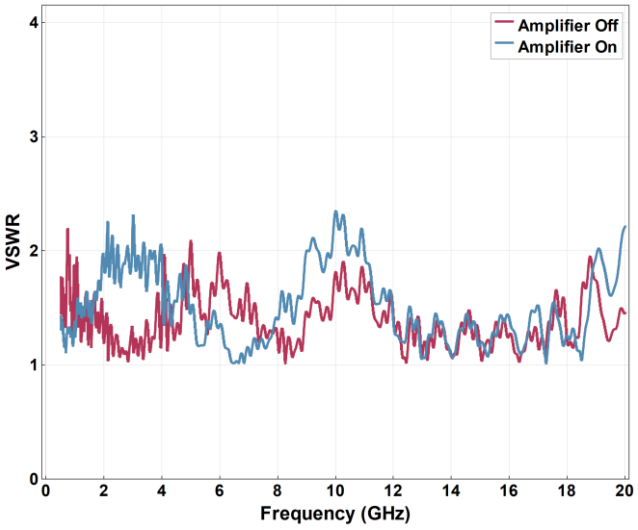
HDA-100 Typical Radiation Patterns



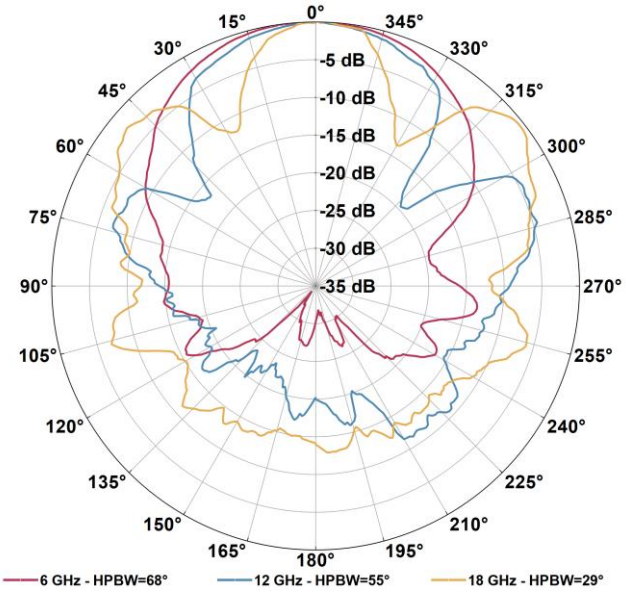
HDA-200 Gain



HDA-200 Antenna Factor



HDA-200 VSWR



HDA-200 Typical Radiation Patterns

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