

ROHDE & SCHWARZ

Make ideas real



ACTIVE ANTENNAS

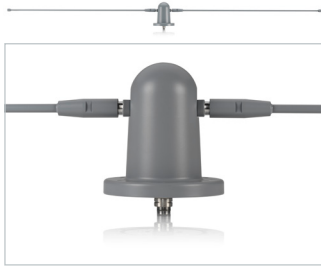
Experts for signal interception
and monitoring

Product Brochure | Version 01.00



ACTIVE ANTENNAS FROM ROHDE & SCHWARZ

Active antennas from Rohde & Schwarz can be used to intercept and monitor signals from 8.3 kHz to 8 GHz. The following active antennas are available for various frequency ranges and applications.



R&S®HE010D active HF dipole

This antenna can be used for sensitive detection of horizontally or vertically polarized waves in the frequency range from 100 kHz to 100 MHz depending on the orientation of the antenna.



R&S®HE309E active vertical dipole

The R&S®HE309E active vertical dipole antenna is designed to receive vertically polarized signals in the frequency range from 20 MHz to 1.3 GHz.



R&S®HE010E active rod antenna

This antenna allows sensitive monitoring of signals with vertical polarization in the frequency range from 8.3 kHz to 100 MHz.



R&S®HE314A1 active omnidirectional antenna

This antenna allows reception of horizontally polarized waves from 20 MHz to 500 MHz. Mounting the R&S®HE309E active vertical dipole on top of the R&S®HE314A1 active omnidirectional antenna allows simultaneous reception of signals with horizontal and vertical polarization.



R&S®HE016 active antenna system

The R&S®HE016 active antenna system is a combination of the R&S®HE010D active HF dipole and the R&S®HE010E active rod antenna. This antenna system allows simultaneous reception of signals with vertical and horizontal polarization.



R&S®HE500 active receiving antenna

This antenna is designed to receive signals with vertical polarization in the frequency range from 20 MHz to 3 GHz. A model for installation on aircraft is also available.



R&S®AU600 active omnidirectional receiving antenna system

This antenna system covers a very wide frequency range from 20 MHz to 8 GHz and allows simultaneous reception of signals with vertical and horizontal polarization.



R&S®HE600 active omnidirectional receiving antenna

This antenna operates in a wide frequency range from 20 MHz to 8 GHz and allows reception of waves with vertical polarization.

ABOUT ACTIVE ANTENNAS

Active antennas are used together with receivers or analyzers for different applications such as spectrum monitoring, signal interception and signal detection. The large frequency range covered by the active antennas from Rohde & Schwarz allows a wide range of applications to be addressed.

The design of the active antennas from Rohde & Schwarz is optimized to support different installation configurations such as on stationary sites as well as on mobile and semi-mobile platforms like vehicles, aircraft or ships. The mechanical design allows the antennas to be used under harsh environmental conditions.

Thanks to their compact size and low weight, the active antennas are the ideal choice for installations where space is limited as well as in mobile and semi-mobile receiving systems.

The excellent sensitivity and low inherent noise allow the active antennas from Rohde & Schwarz to be used for monitoring and intercepting weak signals. High interference immunity to large signals provides flexibility regarding the installation site.

BENEFITS OF ACTIVE ANTENNAS

- ▶ Wider bandwidth than passive antennas
- ▶ Smaller size than passive antennas
- ▶ Excellent sensitivity over their operating frequency range
- ▶ Radiation pattern is almost independent of frequency
- ▶ Ideal for mobile and semi-mobile receiving systems

TYPICAL APPLICATIONS




Fixed and mobile spectrum monitoring

The radio frequency spectrum is a limited natural resource that must be used in the most effective and efficient way. Smart planning of frequency usage and well-designed frequency allocation schemes are crucial. Spectrum monitoring can help to effectively enforce compliance with international radio traffic regulations.

Active antennas from Rohde & Schwarz such as the R&S®HE600 active omnidirectional receiving antenna are used in fixed and mobile spectrum monitoring stations. They support monitoring tasks such as automated detection, identification and localization of interfering signals and unlicensed emissions.



Support for different domains and applications

Domain	Land		
Application	Strategic HF fixed site	Strategic VHF/UHF fixed site/shelter	BEWC ¹⁾
R&S®AU600			
R&S®HE010D	•	•	•
R&S®HE010E	•	•	•
R&S®HE016	•	•	•
R&S®HE309E		•	•
R&S®HE314A1		•	•
R&S®HE500		•	•
R&S®HE600		•	•

Spectrum monitoring at major events

During large-scale events such as Olympic Games, the use of radiocommunications equipment is restricted inside the event area and requires a special license to avoid radio frequency interference. Temporary installation of monitoring stations in the event area is required. Active antennas from Rohde&Schwarz that allow sensitive broadband monitoring are perfectly suited for such tasks.

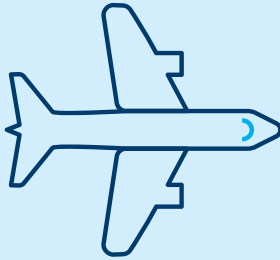



Communications intelligence and electronic support measures

The use of electronic communications devices results in the emission of electromagnetic signals. Interception and analysis of these signals can provide important information about the communications details.

Active antennas from Rohde&Schwarz can be deployed in land based, airborne or ship based COMINT systems. These systems can be used to detect, analyze and evaluate radiocommunications. They allow remote intelligence gathering and assessment of the situation while supporting an early warning function and helping to unveil threats.

The R&S®HE010E active rod antenna, for example, with its compact size and low weight is the perfect choice for different applications on land and at sea. The antenna is suitable for monitoring strong as well as weak signals. Due to its high sensitivity, the antenna can cover wide regions.

- ¹⁾ Backbone EW composite.
- ²⁾ Maneuver EW composite.
- ³⁾ Light EW composite.
- ⁴⁾ Communications intelligence.

		Air		Sea	
		Airborne COMINT ⁴⁾		Naval COMINT ⁴⁾	
MEWC ²⁾	LEWC ³⁾				
					
•					
•	•				
•	•			•	
•	•				
•	•			•	
•	•				
•	•	•			
•	•				

HIGH-QUALITY ACTIVE ANTENNAS FROM ROHDE & SCHWARZ

Type	Frequency range	Radiation characteristics		Possible installation			
		Omnidirectional	Directional	Stationary	Mobile or semi-mobile	Shipboard	Aircraft
R&S®AU600	20 MHz to 8 GHz	•		•	•		
R&S®HE010D	100 kHz to 100 MHz	•		•	•		
R&S®HE010E	8.3 kHz to 100 MHz	•		•	•	•	
R&S®HE016	<ul style="list-style-type: none"> ▶ 9 kHz to 80 MHz (vertical) ▶ 600 kHz to 40 MHz (horizontal) 	•		•	•		
R&S®HE309E	20 MHz to 1.3 GHz	•		•	•	•	
R&S®HE314A1	20 MHz to 500 MHz	•		•	•		
R&S®HE500	20 MHz to 3 GHz	•		•	•		•
R&S®HE600	20 MHz to 8 GHz	•		•	•		



For more information:

- ▶ Consult the Antennas and Accessories Catalog 2024/2025 (PD 0758.0368.42)
- ▶ Visit www.rohde-schwarz.com
- ▶ Contact your local Rohde & Schwarz sales representative to discuss your application

	Polarization	Applications		Product highlights and benefits
		Spectrum monitoring	Communications intelligence	
	vertical and horizontal	•	•	<ul style="list-style-type: none"> ▶ Reception of horizontal and vertical polarization simultaneously with only one antenna system to reduce number of antennas needed ▶ Integrated switchable low-noise amplifiers support increased system sensitivity and allow installation of the antenna system at locations close to transmitting antennas ▶ Integrated bandstop filters to suppress unwanted signals
	vertical or horizontal	•	•	<ul style="list-style-type: none"> ▶ Exchangeable antenna rods for easy service and transportation ▶ Protection against overvoltage due to atmospheric discharge or transmitting antennas provides flexibility regarding selection of installation sites
	vertical	•	•	<ul style="list-style-type: none"> ▶ High sensitivity for detection of very weak signals ▶ Compact size for installation in places with limited space
	vertical and horizontal	•	•	Omnidirectional and simultaneous reception of horizontally and vertically polarized signals with only one antenna system
	vertical	•	•	High linearity and spurious-free dynamic range for accurate measurement results over a wide dynamic range
	horizontal	•	•	High sensitivity for detection of very weak signals
	vertical	•	•	<ul style="list-style-type: none"> ▶ Integrated preamplifier improves the S/N ratio and ensures good reception results ▶ Antenna variant available for use on aircraft
	vertical	•	•	<ul style="list-style-type: none"> ▶ Integrated preamplifier improves the S/N ratio and ensures good reception results ▶ Suitability for operation under harsh environmental conditions provides flexibility regarding installation sites

ORDERING INFORMATION

Designation	Type	Order No.
R&S®AU600 active omnidirectional receiving antenna system		
Antenna		
Active omnidirectional receiving antenna system, color: squirrel gray (RAL 7000)	R&S®AU600	4094.6003.02
Accessories		
Open switch and control platform, without touchscreen	R&S®OSP-220	1528.3105.02
Open switch and control platform, with touchscreen	R&S®OSP-230	1528.3105.03
R&S®OSP module for R&S®AU600	R&S®OSP-B158	4094.7300.02
Supply and control cable for R&S®AU600 and R&S®OSP-B158, lengths: 10/20/50 m	R&S®AU600-K1	4094.7100.10/20/50
Outdoor control box for R&S®AU600	R&S®OCB600	3059.7400.02
R&S®HE010D active HF dipole		
Antenna		
Active dipole, color: squirrel gray (RAL 7000)	R&S®HE010D	4097.8007.02
Active dipole, color: bronze green (RAL 6031)	R&S®HE010D	4097.8007.03
Active dipole, color: light ivory (RAL 1015)	R&S®HE010D	4097.8007.04
Accessories		
Bias unit	R&S®IN600	4094.3004.xx
Mast, length: 6 m, pluggable	R&S®KM011	0273.9116.02
R&S®HE010E active rod antenna		
Antenna		
Active rod antenna, color: squirrel gray (RAL 7000)	R&S®HE010E	4097.6004.02
Active rod antenna, color: bronze green (RAL 6031)	R&S®HE010E	4097.6004.03
Active rod antenna, color: light ivory (RAL 1015)	R&S®HE010E	4097.6004.04
Accessories		
Bias unit	R&S®IN600	4094.3004.xx
R&S®HE016 active antenna system		
Antenna		
Active antenna system	R&S®HE016	4051.8504.02
Accessories		
Bias unit	R&S®IN600	4094.3004.xx
Mast, length: 6 m, pluggable	R&S®KM011	0273.9116.02
R&S®HE309E active vertical dipole		
Antenna		
Active vertical dipole, color: squirrel gray (RAL 7000)	R&S®HE309E	4098.0000.02
Active vertical dipole, color: bronze green (RAL 6031)	R&S®HE309E	4098.0000.03
Active vertical dipole, color: light ivory (RAL 1015)	R&S®HE309E	4098.0000.04
Accessories		
Bias unit	R&S®IN600	4094.3004.xx

Designation	Type	Order No.
R&S®HE314A1 active omnidirectional antenna		
Antenna		
Active omnidirectional antenna	R&S®HE314A1	4027.6505.02
Accessories		
Bias unit	R&S®IN600	4094.3004.xx
R&S®HE500 active receiving antenna		
Antenna		
Active receiving antenna	R&S®HE500	4059.2005.02
Active receiving antenna, for use on aircraft	R&S®HE500	4059.2005.14
Accessories		
Bias unit	R&S®IN600	4094.3004.xx
R&S®HE600 active omnidirectional receiving antenna		
Antenna		
Active omnidirectional receiving antenna, color: squirrel gray (RAL 7000)	R&S®HE600	4094.9002.02
Active omnidirectional receiving antenna, color: bronze green (RAL 6031)	R&S®HE600	4094.9002.03
Active omnidirectional receiving antenna, color: light ivory (RAL 1015)	R&S®HE600	4094.9002.04
Accessories		
Bias unit	R&S®IN600	4094.3004.xx
Mast and tripod adapter	R&S®KM011Z9	4095.0750.02
Wooden tripod	R&S®HZ-1	0837.2310.02

Service at Rohde & Schwarz You're in great hands

- ▶ Worldwide
- ▶ Local and personalized
- ▶ Customized and flexible
- ▶ Uncompromising quality
- ▶ Long-term dependability

Rohde & Schwarz

The Rohde&Schwarz technology group is among the trail-blazers when it comes to paving the way for a safer and connected world with its leading solutions in test & measurement, technology systems and networks & cybersecurity. Founded 90 years ago, the group is a reliable partner for industry and government customers around the globe. The independent company is headquartered in Munich, Germany and has an extensive sales and service network with locations in more than 70 countries.

www.rohde-schwarz.com

Sustainable product design

- ▶ Environmental compatibility and eco-footprint
- ▶ Energy efficiency and low emissions
- ▶ Longevity and optimized total cost of ownership

Certified Quality Management

ISO 9001

Certified Environmental Management

ISO 14001

Rohde & Schwarz training

www.training.rohde-schwarz.com

Rohde & Schwarz customer support

www.rohde-schwarz.com/support

