

# R&S®HX002H0 HF DIPOLE WITH ATU

2 MHz to 30 MHz

For stationary use and 1 kW transmit power



The R&S®HX002H0 HF dipole with ATU permits optimum coverage of all distance ranges. It is particularly useful for radiocommunications over short and medium distances, since below 1000 km vertical rod antennas do not ensure sufficient transmission reliability because of the skip zone.

The fully automatic ATU integrated in the antenna provides perfect matching to the transmitting system so that full RF output power capabilities are available. The high efficiency of the antenna is obtained because the matching network is directly located at the feed point of the dipole.

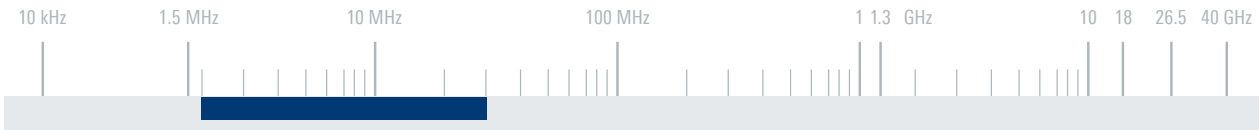
Together with the R&S®GX002, the R&S®HX002H0 can be seamlessly integrated into the R&S®Series4100 and R&S®M3TR radio systems. Furthermore, the R&S®HX002H0 can be controlled by a third-party system controller via LAN interface.

Lightning protection circuitry is provided in the antenna head, at multiple locations inside the ATU and in the balun section.

## Key facts

- ▶ High RF power at small antenna (1 kW, 5 m radiator radius)
- ▶ Omnidirectional coverage with high-angle radiation (NVIS), no skip zone
- ▶ Very compact dimensions, setup close to neighboring antennas possible
- ▶ High efficiency (no resistive loading)
- ▶ RF-cable-only interface
- ▶ Single supporting mast
- ▶ Cosite robust, fast tuning with low or zero RF power
- ▶ Transceiver-independent control interface and power supply (via R&S®GX002)
- ▶ Fully automatic operation possible

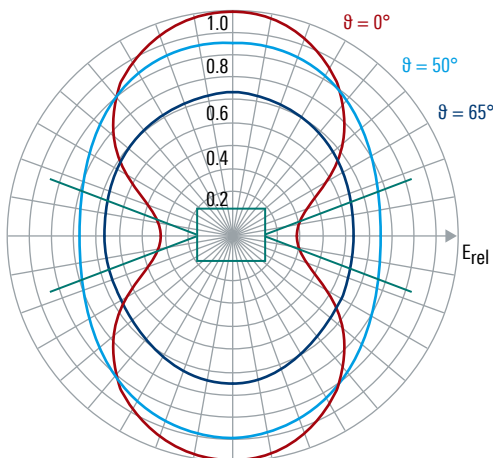




Specifications		
Frequency range		2 MHz to 30 MHz
Maximum permissible RF input power		1 kW
Input impedance		50 Ω (nom.)
VSWR	after tuning	≤ 1.8; < 1.3 (typ.)
Tuning time	silent tune/bypass activation	< 70 ms
	active tune	< 25 s; < 4 s (typ.)
	initial learning of whole frequency range	< 80 min (typ.)
Tuning power	integrated antenna analyzer	≤ 1 W
Efficiency	at 2 MHz	> 20%
	f > 5 MHz	> 75%
Gain	depends on frequency, ground properties and mast height	-3.3 dBi to +7.8 dBi (typ.)
RF interface (with DC supply and control information)	to R&S®GX002	N female
Protection class		IPx6, waterproof, in line with IEC 60529
Maximum wind speed	without ice deposit	275 km/h
Dimensions	ATU housing (W × D × H)	approx. 0.5 m × 0.5 m × 1.3 m (19.7 in × 19.7 in × 51.2 in)
	radiator-tip rectangle	approx. 9.6 m × 4.1 m (31.5 ft × 13.5 ft)
Weight		approx. 155 kg (341.7 lb)

Ordering information	Type	Order No.
HF dipole with ATU	R&S®HX002H0	4102.7009.02
Recommended extras		
Junction unit	R&S®GX002	4106.0009.02
Mast, length: 5 m, for roof mounting	R&S®KM002Z0	4115.9005.02
Tilt kit, for R&S®KM002Z0 mast	R&S®KM002Z0-K	4115.9505.02
Lattice mast, length: 10 m	R&S®KM451B1	4028.3351.02
Lattice mast, length: 15 m	R&S®KM451B2	4028.3400.05
Legacy mast adapter, for e.g. old R&S®HX002Z1 mast	R&S®KM002Z2	4115.9640.02

**Typical horizontal radiation pattern for various elevation angles  $\theta$**



**Typical vertical radiation pattern (12 m above an ideal conductive plane)**

