

# HF Antennas

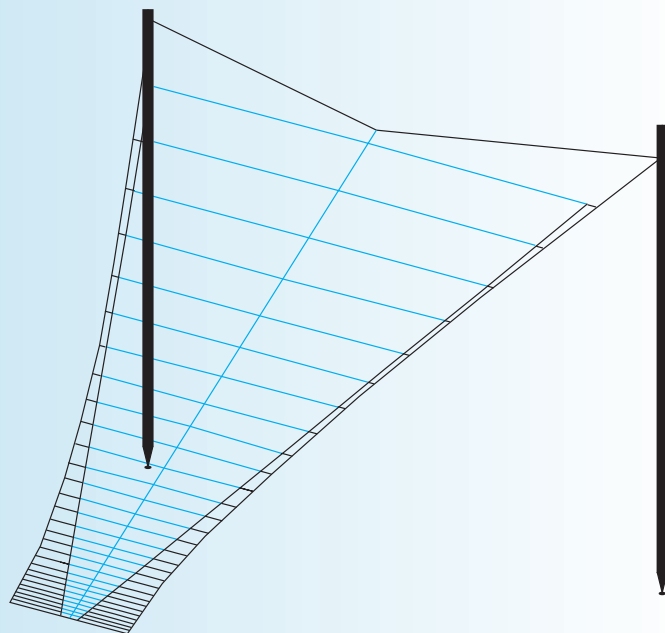
## Log-Periodic HF Antenna

R&S®HL410A3



**1.5 MHz to 30 MHz**

**For radiomonitoring over short, medium and global distances with extremely high sensitivity**



### Features

- ◆ Extremely wide frequency range
- ◆ Very high efficiency through dipole structure
- ◆ Reception of even very weak signals
- ◆ High directivity
- ◆ No skip zone
- ◆ Small antenna size for 1.5 MHz to 30 MHz range
- ◆ Little maintenance required

### Brief description

The R&S®HL410A3 is suitable for the reception of horizontally polarized waves and allows even very weak signals to be detected.

The vertical pattern is shaped taking into account the transmission characteristics in the ionosphere. In conjunction with the extremely wide frequency range from 1.5 MHz to 30 MHz, the antenna thus allows reception over short, medium and global distances.

The half-power beamwidth of the horizontal radiation pattern of about 70° can be enhanced up to 360° by adding five further antennas. For the reception of vertically polarized waves, the antenna can be combined with the Log-Periodic HF Antenna R&S®HL210A3.

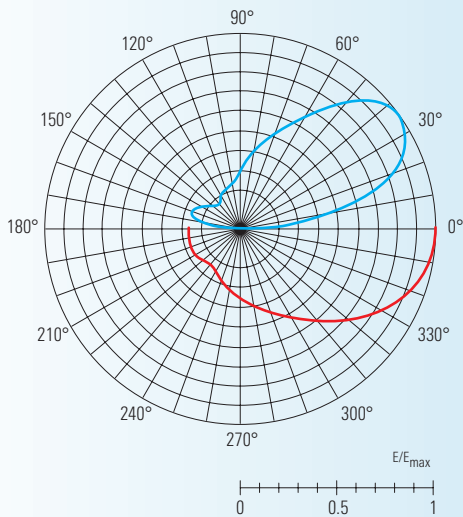


## Specifications

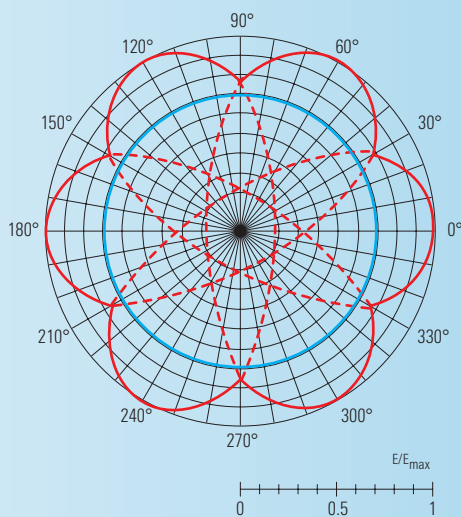
|                             |                                      |   |                           |
|-----------------------------|--------------------------------------|---|---------------------------|
| Frequency range             | 1.5 MHz to 30 MHz                    | Max. wind speed   |                           |
| Polarization                | linear/vertical                      | Without ice deposit   | 170 km/h (for survival)   |
| Input impedance             | 50 $\Omega$                          |   | 145 km/h (to DIN EN 4131) |
| VSWR                        |                                      | With 20 mm radial ice deposit (rope diameter >7 mm)                             | 135 km/h (to DIN EN 4131) |
| 1.5 MHz to 2 MHz            | <6                                   | With radial ice deposit of 2 $\times$ rope diameter (rope diameter $\leq$ 7 mm) | 135 km/h (to DIN EN 4131) |
| 2 MHz to 30 MHz             | <2.5, typ. <2.0                      | Dimensions  |                           |
| Directivity                 |                                      | Length of antenna array   | approx. 94 m              |
| 1.5 MHz                     | 7.5 dBi                              | Width of antenna array  | approx. 88 m              |
| 1.6 MHz to 30 MHz           | 8 dBi to 12 dBi                      | Height of supporting mast   | approx. 66 m              |
| Efficiency                  | >90%                                 |   |                           |
| Connector                   | N female                             |   |                           |
| MTBF                        | $\geq$ 100 000 h                     |   |                           |
| Operating temperature range | -40 $^{\circ}$ C to +70 $^{\circ}$ C |   |                           |

## Ordering information

**Log-Periodic HF Antenna** R&S<sup>®</sup>HL 410A3 on request



**Typical vertical (blue) or horizontal (red, only half shown) radiation pattern**



**Typical horizontal omnidirectional reception characteristic (red = single patterns, blue = 3 dB reference) of a system with six R&S<sup>®</sup>HL 410A3**