

ANTENNAS



VHF 100 to 163 MHz
UHF 225 to 400 MHz

VHF/UHF Antennas/Diplexer

for ground-to-air or naval radiocommunications

Reliable VHF/UHF communication systems call for rugged designs that are resistant to all types of weathering. When operating several radio units, a solution to the collocation problem is additionally required to ensure interference-free operation. A further require-

ment which concerns the infrastructure is that the number of antennas and the space taken up by the installation should be minimum. The Rohde & Schwarz antenna program for the VHF/UHF range from 100 MHz

upwards therefore contains in addition to single dipole antennas

- combined VHF/UHF Antenna HK014
- VHF/UHF Diplexer FT224



ROHDE & SCHWARZ

VHF/UHF Coaxial Dipole HK001, HK012, HK0



UHF Coaxial Dipole HK001



VHF Coaxial Dipole HK012



VHF/UHF Coaxial Dipole HK014

Brief description

The Coaxial Dipoles are vertically polarizing omnidirectional antennas with high suppression of current flow on the outside of cables. As a result of their rugged design, they are also suitable for mobile use, and particularly for shipboard applications.

- Low weight
- Minimal wind load
- Very rugged
- Protected against lightning
- Wide frequency range (HK014)
- Null fill-in of vertical pattern (HK014)

Specifications, Ordering information

	HK001	HK012	HK014
Frequency range	225 to 400 MHz	100 to 165 MHz	100 to 1300 MHz
Polarization	vertical	vertical	vertical
Nominal impedance	50 Ω	50 Ω	50 Ω
VSWR	≤2	≤2	≤2
Permissible input power	400 W (rms)	400 W (rms)	1 kW CW/1.6 kW PEP 600 W CW/600 W PEP 150 W CW
Gain	2 dBi typ.	2 dBi typ.	2 dBi typ.
Horizontal pattern	circular	circular	circular
Connector	N female	N female	N female
Permissible wind velocity	185 km/h	160 km/h	160 km/h
Operating temperature range	-40 to +85°C	-40 to +85°C	-40 to +85°C
Dimensions (dia. x H)	430 mm x 470 mm	250 mm x 1150 mm	308 mm x 1100 mm
Weight	1.6 kg	3 kg	5 kg
Ordering number	425.2781.03	459.7611.02	644.1514.02

Recommended extra

Diplexer FT224 for the frequency ranges 100 to 162 MHz and 225 to 400 MHz

Diplexer FT224

The Diplexer FT224 permits the connection of a broadband antenna, eg the VHF/UHF Coaxial Dipole HK014, to transceivers with separate VHF and UHF outputs or to separate VHF and UHF transceivers.

- Wide range of application
- Low passband attenuation
- High stopband attenuation
- Compact design



Ordering information

Diplexer FT224 525.5117.03

Specifications

Frequency range	100 to 162 MHz 225 to 400 MHz
Nominal impedance	50 Ω
VSWR	<1.5 (with 50 Ω termination) <2 (with HK014)
Insertion loss	<0.3 dB (VHF), <0.5 dB (UHF)
in passband	>30 dB
in stopband	>30 dB
Permissible input power	200 W CW, 800 W PEP per branch in simultaneous operation
Connector	N female
Operating temperature range	-20 to +55°C
Dimensions (W x H x D)	130 mm x 130 mm x 50 mm
Weight	0.5 kg

VHF/UHF Omnidirectional Antenna HK353A

Brief description

The Antenna System HK353A is designed for ATC ground-to-air communications. Due to its modular design, any number of antenna configurations can be set up. The most important components are the self-supporting antenna mast, the VHF dipole, the UHF dipole as well as specially developed decoupling units. The co-linear arrangement of dipoles on the antenna mast permits several transmitting and receiving antennas to be set up.

With a view to simple transportation, the antenna mast made of glassfiber-reinforced plastic (GRP) comes in two sections (starting with the 8-m version). The modular dipoles and the decoupling units are arranged inside the supporting cylinder.

Specifications

VHF Dipole HK153D2	
Frequency range	100 to 156 MHz
Permissible input power	1 kW per dipole
Impedance (unbalanced)	50 W
VSWR	<2.5 (in the radome)
Gain (with reference to isotropic radiator)	>2 dB per dipole
Polarization	vertical
Departure of azimuth pattern from circularity	<+1 dB
RF connectors	R&S male for RG400
Dimensions	
Maximum length	1850 mm (2 LU)
Maximum diameter	248 mm
Weight	6 kg
UHF Dipole HK253D2	
Frequency range	225 to 400 MHz
Permissible input power	1 kW per dipole
Impedance (unbalanced)	50 W
VSWR	<2.5 (in the radome)
Gain (with reference to isotropic radiator)	>2 dB per dipole
Polarization	vertical
Departure of azimuth pattern from circularity	<+1 dB
RF connectors	R&S male for RG400
Dimensions	
Maximum length	925 mm
Maximum diameter	248 mm
Weight	1.6 kg
Mechanical data	
Permissible wind speed	
Without icing	190 km/h
With radial icing of 5 cm	177 km/h



VHF/UHF Omnidirectional Antenna HK353A

Wind load (static)	
Without icing	depending on mast
With radial icing of 5 cm	
Torque on flange (static)	
Without icing	depending on mast
With radial icing of 5 cm	
Weight	
Without icing	depending on mast
With radial icing of 5 cm	
Total height	depending on mast
Outer diameter of mast	275 mm
Outer diameter of flange	410 mm

System components

Mast (2-m mast with lightning protection and all accessories)	KM353H2	4031.7854.02	Mast (8-m mast with hazard light and all accessories)	KM353H8	4031.3107.03
Mast (2-m mast with hazard light and all accessories)	KM353H2	4031.7854.03	Mast (10-m mast with lightning protection and all accessories)	KM353	4002.1251.02
Mast (4-m mast with lightning protection and all accessories)	KM353H4	4031.1004.02	Mast (10-m mast with hazard light and all accessories)	KM353	4002.1251.03
Mast (4-m mast with hazard light and all accessories)	KM353H4	4031.1004.03	VHF-Dipole (with supporting disk and all connecting material)	HK153D2	4002.1351.02
Mast (6-m mast with lightning protection and all accessories)	KM353H6	4028.6509.02	UHF-Dipole (with supporting disk and all connecting material)	HK253D2	4002.1400.02
Mast (6-m mast with hazard light and all accessories)	KM353H6	4028.6509.03	Decoupling Unit (with supporting disk and all connecting material)	HK253E2	4002.1500.02
Mast (8-m mast with lightning protection and all accessories)	KM353H8	4031.3107.02	Hollow Tube (with supporting disk and all connecting material)	HK253F2	4002.1551.02
			RF-Cable	HK153K2 HK253K2	4002.1651.xx 4002.1851.xx





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