

VortexWave Antenna Series

State-of-the-Art

Cavity-Backed Spiral Antennas



Compact and Light Weight



0.5-40 GHz Operation



Suitable for RWR, DF



Wide CP Beamwidth



Environmental sealing



Upto 10 W Power Handling



The VortexWave Cavity-Backed Spiral Antenna lineup is designed to meet the demanding requirements of advanced communication systems with its superior broadband performance, circular polarization, and compact form factor. These antennas are crucial for satellite communication, particularly in LEO, MEO, and GEO satellites, ensuring reliable uplink and downlink operations across wide frequency ranges. In radar systems, including ground-penetrating radar and airborne radar, the VortexWave antennas offer exceptional frequency coverage and high sensitivity, enabling precise detection and tracking. For electronic warfare, these antennas provide robust capabilities for signal interception and jamming across extensive spectra.

Applications

- Electronic Warfare: Intercepting and jamming enemy signals
- Radar Systems: Detecting and tracking objects, GPR application
- Wideband Direction Finding: Locate the source of radio transmission
- Aircrafts and UAVs: Used in applications like RWR, Navigation Aids like VOR, TACAN etc
- Satellite Communication: Uplink-Downlink communication and Weather satellites
- Signal Intelligence: Providing critical info on enemy communications

Electrical Specifications

Parameter	VW053	VW118_C	VW218	VW1840
Frequency Range	500 MHz – 3 GHz	1 GHz – 18 GHz	2 GHz – 18 GHz	18 GHz – 40 GHz
VSWR	3:1 (max) 2.5:1 (typ)	2.5:1 (max)	2:1	2:1
Impedance	50 Ω	50 Ω	50 Ω	50 Ω
Gain	>0 dBiC (typ)	-18 dBiC (freq = 1 GHz) >-3 dBiC (freq ≥ 2 GHz)	>1 dBiC	5 dBiC – 9 dBiC
Directionality	Directional	Directional	Directional	Directional
Polarization	LHCP/RHCP	LHCP/RHCP	LHCP/RHCP	LHCP/RHCP
3dB Beamwidth	50° – 120°	55° – 110°	55° – 140°	50° – 90°
10dB Beamwidth	90° – 160°	110° – 200°	110° – 200°	100° – 160°
Axial Ratio	<8 dB (freq = 0.5 – 0.7 GHz) <2 dB (freq > 0.7 GHz)	<2 dB	<2 dB (typ)	<2 dB
Beam Squint	<10°	<10°	<8°	<6°
Power Handling	10W CW	5W CW	5W CW	2W CW

Mechanical Specifications

Parameter	VW053	VW118_C	VW218	VW1840
Connector	N-Type Female	SMA Female	SMA Female	K-type (2.92 mm)
Diameter	30 cm	80 mm	75 mm	19 mm
Height	15 cm	35 mm	35 mm	17 mm
Weight	<2 Kg	<400 grams	<350 grams	<60 grams
Operating Temp	-30°C – 65°C	-30°C – 65°C	-30°C – 65°C	-30°C – 65°C
Construction	Aluminum	Aluminum	Aluminum	Aluminum