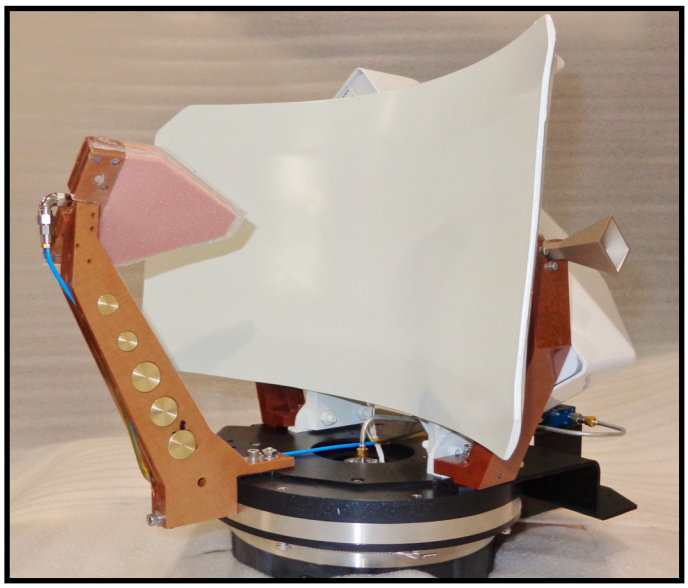
KRATOS®
READY FOR WHAT'S NEXT™

Direction Finding (DF) Spinning Antenna System

Antenna Features

- **Compact Package**
- **Spin, Sector & Designate Modes**
- **±0.2° Accuracy & ±0.1° Pointing Resolution**
- **Rugged and Field Tested**
- **Multi-platform Applications**
- **DC Brushless Motors**
- **RS-422 Controlled**
- **Radome Encapsulated for Protection**
- **0.5-18 GHz or 0.5-40 GHz Frequency Ranges**
- **Optional 0.5-40 GHz Omni Antenna**



The Kratos Spinning DF Antenna System is a compact, lightweight, rugged Direction Finding Antenna designed for ground-based, mobile, marine and airborne applications. Frequency coverage is 0.5 to 18 GHz with an extended band version up to 40 GHz available. Antennas are slant linear polarized allowing for vertical, horizontal and circular signal reception.

The DF Antenna System operates in either full spin, variable spin, sector scan or manual modes providing versatility and adaptability to mission requirements.

The directional antenna assembly is comprised of a 0.5 to 2 GHz log-periodic dipole array and a 2 to 18 GHz log-periodic dipole array which uses a parabolic reflector that increases gain and narrows the azimuth beamwidths. The extended band variant employs two horn antennas covering 18 to 26 GHz and 26 to 40 GHz. An optional omnidirectional antenna mounts on the top of the ground based unit's radome, providing a secondary means of signal detection.

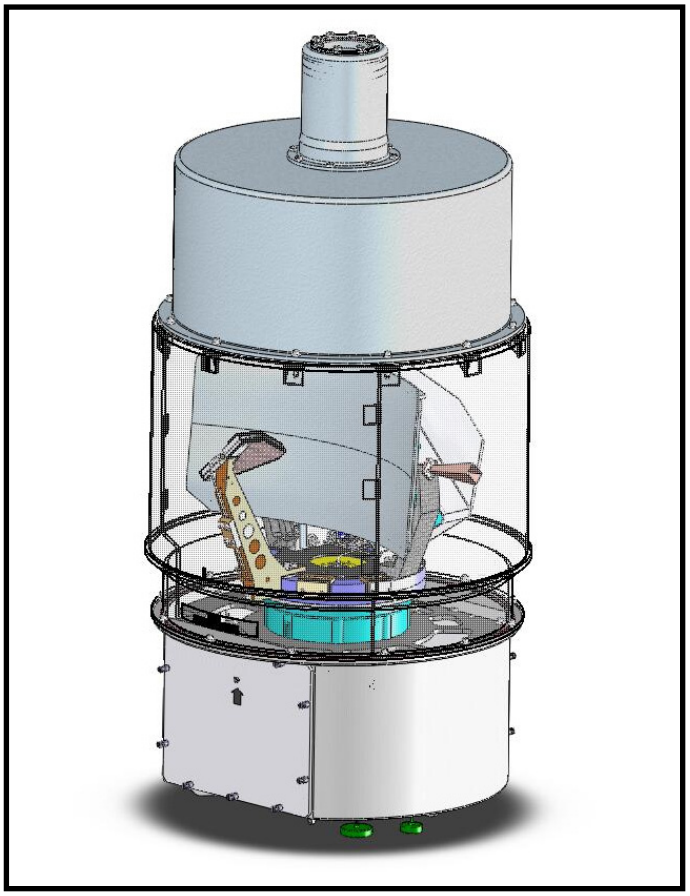
The direct-drive pedestal design provides high reliability by minimizing the number of moving parts. The servo based control system provides smooth operation from speeds of 1 to 1200 degrees per second.

A single channel coaxial rotary joint connecting the RF signals is mounted on the rotator center line. The pedestal can be designed to accomodate custom furnished RF distribution circuitry and millimeter wave down converters. These units also employ slip rings to provide DC signals to any necessary amplification circuitry.

The system comes complete with a custom designed antenna control unit mounted on a half rack ART chassis with RS-422 serial communication.

For improved environmental protection the ground-based DF units and the omnidirectional antennas are radome encapsulated.

Ground Based DF with Optional Omni Antenna



DF Spinning Antenna System

DF Spinning Antenna

Frequency Range	Low Band	High Band	Extended Band
	0.5-2.0 GHz	2-18 GHz	18-40 GHz
Polarization: 45° Slant Linear			

Antenna Gain *

Frequency (GHz)	Typical (dBi)
0.5-2.0	6
2	10
4	12
8	16
12	18
18	20
18-26	15
26-40	15
* Measured at Antenna Feeds	

Azimuth Beamwidths

Frequency (GHz)	Maximum (degrees)
0.5-2.0	85.0
2	22.0
4	12.0
8	6.0
12	4.0
18	3.0
18-26	24
26-40	24

Azimuth Squint

Frequency (GHz)	Degrees
0.5-2	±4.0
2-12	±1.5
12-18	±1.0
18-40	±3.0

All Elevation Beamwidth, 15° Minimum

VSWR: < 3.5:1 (measured at feedpoints)

Spin Rate: 0 - 200 rpm

Sector Scan Rate:	>30° Sector: 1° - 60°/sec
	<30° Sector: 2x Sector Width°/sec
Size (excluding base casting & omni antenna)	19.5” Dia. x 17.5” High
Weight	40 lb

Omni Directional Antenna

Low Band	High Band
0.5-8.0 GHz	8.0-40 GHz
Polarization	Slant Linear
Elevation	25° Typical
Beamwidth	12° minimum (3 dB points)
Deviation from Omni	±4 dB maximum

Frequency (GHz)	Typical (dBi)
0.5-0.6	-7
0.6-0.75	-4
0.75-1.0	-2
1.0-1.5	0
1.5-2.0	1
2.0-8.0	2
8.0-18.0	2
18.0-40.0	2

VSWR:	**0.5-0.85 GHZ**	**<6:1**
	0.85-18.0 GHz	**<3.5:1**
	18.0-40.0 GHz	**<3.5:1**
Size	19” Diameter x 15” High (48.26 cm x 38.1 cm)	
Weight	18 lbs (8.16 kg)	

Antenna Controller

Dimensions (nominal)		15” x 8”x 22” (38.1cm x 20.3cm x 55.9cm)
Half Long ATR, ARINC 404A Form Factor		
Weight		18 lbs (8.16 kg)
Input Power	110/220 VAC ±10%, 50/60 Hz, Single Phase	
Op Modes: Designate, Scan, Spin, Variable Spin, Halt, Resume		

Environmental (Antenna and Rotator unit)

Altitude	up to 50,000 feet	
Temperature	Operational	-55°C to +65°C
	Storage	-60°C to +70°C
Humidity	0 to 95%	
Rain, Sand, Dust, Vibration and Shock:		Designed to meet the Intent of MIL-STD-810

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