DF SPINNER ANTENNA SYSTEM

pedestals

Direction Finding (DF) Spinning Antenna System

The ASC Signal spinning DF antenna system is a compact, lightweight DF antenna designed for mobile, marine and airborne applications. Frequency coverage is from 0.5 to 8 GHz with an extended band version up to 40 GHz available. Antennas are slant linear polarized with the high band antenna (2 - 18 GHz) also available in dual polarization if required.

The DF antenna system operates in either full spin, variable spin, sector scan or manual modes providing versatility and adaptability to mission requirements. The rugged construction and flexible configuration allows for applications on ground-based, marine or airborne platforms.

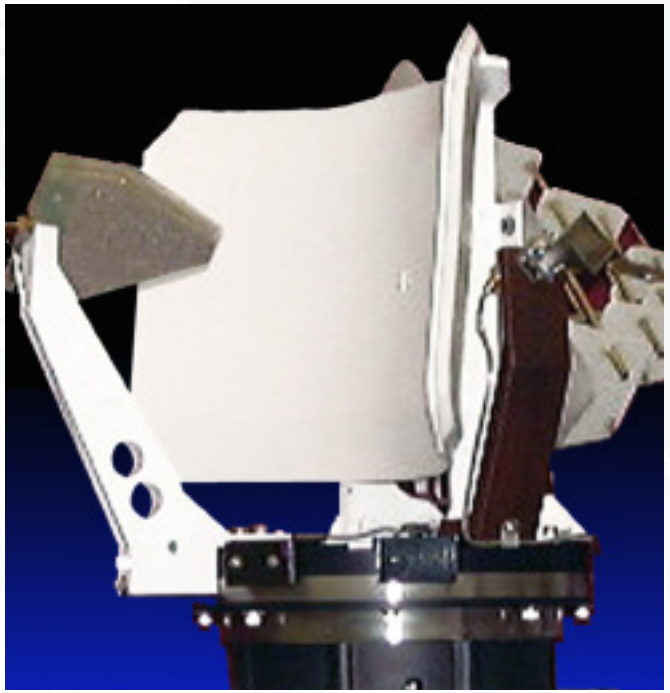
The directional antenna assembly is comprised of a 0.5 - 2 GHz log periodic dipole array and a 2 - 18 GHz parabolic reflector with a log periodic feed. The extended band variant employs two horn antennas covering 18 - 26 GHz and 26 - 40 GHz. An optional omnidirectional antenna mounts on top of the spinning DF Antenna radome.

The direct-drive pedestal design provides high reliability by minimizing the number of moving parts.

A single channel RF rotary joint connecting radio frequency signals is mounted on the rotator center line. The pedestal can be designed to accommodate customer furnished RF distribution circuitry and millimeter wave down converters.

The system comes complete with a custom designed, full function antenna control unit mounted in a half rack ATR chassis with RS-422 serial communication.

For improved environmental protection, both the DF spinning and omnidirectional antennas are radome enclosed.



ANTENNA FEATURES

- Compact Package
- Spin, Sector and Point Modes
- ±0.2° Accuracy & 0.1° Pointing Resolution
- Rugged and Field Tested
- Multi-platform Applications
- DC Brushless Motors & No Slip Ring Assembly
- RS-422 Controlled
- Radome Enclosed for Protection
- Optional Omni Antenna

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DF Spinning Antenna

Frequency Range	Low Band	High Band	Extended Band
	0.5 - 2.0 GHz	2 - 18 GHz	18 - 40 GHz

Polarization: 45 Degrees Slant Linear, Dual Polarization available on High Band

Antenna Gain*	Frequency (GHz)	Minimum (dBi)
	0.5 - 2	4.0
	2	24.0
	4	12.0
	8	15.0
	12	17.0
	18	19.0
	18 - 26	12.5
	26 - 40	12.5

* Measured at Antenna Feeds

Azimuth	Frequency (GHz)	Maximum (Degree)
	0.5 - 2	85.0
	2	24.0
	4	12.0
	8	6.0
	12	4.0
	18	3.0
	18 - 26	30.0
	26 - 40	35.0

Elevation 15° Minimum

Beamwidth (-5° - +10° Relative to Horizon)

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

VSWR <3.5:1 (Measured at Antenna Connectors)		
Spin Rate	0 - 200 rpm	
F Search	Scan Rate	
>30° Sector	1° - 60°/Sec	
<30° Sector	2x Sector Width °/Sec	
Size	19.5 in. Diameter x 17.5 in. High	
Weight	40 lb	

Omni Directional Antenna

Frequency Range	Low Band	High Band
	0.5 - 8.0 GHz	8 - 40 GHz

Polarization	Slant Linear	
Elevation	25° Typical	
Beamwidth	12° Min. (3 dB Points)	
Deviation from Omni	±4 dB Maximum	

Antenna Gain*	Frequency (GHz)	Maximum (dBi)
	0.5 - 0.6	-10
	0.6 - 0.75	-7
	0.75 - 1.0	-5
	1.0 - 1.5	-4
	1.5 - 2.0	-2
	2.0 - 8.0	0
	8.0 - 18.0	-4
	18.0 - 40.0	-4

VSWR	0.5 - 0.85 GHz	<6:1
	0.85 - 18.0 GHz	<3:5:1
	18.0 - 40.0 GHz	<3:1:1
Size	19 in. Diameter x 15 in. High	
Weight	18 lb	

Antenna Controller

Dimensions (Nominal)	15 in. x 8 in. x 22 in.
Half Long ATR, ARINC 404A Form Factor	
Weight	18 lb
Input Power	110/220 VAC ± 10%, 50/60/400 Hz, Single Phase

Modes: Standby, Designate, Scan, Spin, Variable Spin, Halt, Resume

Environmental

Altitude	Up to 50,000 Feet	
Temperature	Operational	Storage
	-20° to 50°C	-40° to 70°C
Humidity	0 to 95%	

Rain, Sand, Dust, Vibration and Shock: Designed to Meet the Intent of MIL-STD -710

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