

2.4m Tracking Antenna



IN-SNEC®

The Sparte pedestal is the historical positioning system for tracking antennas of Zodiac Data Systems, widely installed in the world through the past decades. This third version benefits from a highly optimised design inheriting from the former models experience, and the extensive know-how of Zodiac Data Systems in the field of tracking antennas. This robust antenna ensures to our customers a long lifetime, highly accurate operations, and simple maintenance tasks.

The Sparte family of antennas allows to address a variety of applications, such as aircraft tracking with a Conical Scan feed, very high speed targets with high dynamics thanks to an SCM feed, or duplex datalinks with an Rx/Tx system. Additionally, the numerous and customizable I/Os empower users with the ability to operate the antenna in a multi-site tracking fashion, with master-slave communications between smaller and larger models.

The Sparte antenna presents a cost-effective, high performance and versatile tracking antenna system for all users unwilling to make compromise on their flight-tests. Simple interfaces allow users to consider a fixed or vehicle-mounted installation ; Zodiac Data Systems is also able to provide trailers, and/or required add-ons for shipborne operations.

**FOR TODAY AND TOMORROW AND THE LONGTERM
MAKE ZODIAC DATA SYSTEMS YOUR TECHNOLOGY PARTNER OF CHOICE**

ZODIAC DATA SYSTEMS

AEROSAFETY & TECHNOLOGY
Telemetry & Telecommunications

L+S / S

◆
SPARTE pedestal

Main Features

- High speed Elevation over Azimuth pedestal with acceleration up to $40^\circ/s^2$
- SCM feed for high speed target tracking or ConScan feed for long range tracking
- Axial video camera for direct visual target aiming
- Shipborne transformation kit including gyro inertial unit and extended elevation travel range
- Easily dismountable aerial parts (feed, arms, reflector) for transportable version

Main Benefits

- Rugged design providing high pointing & tracking accuracy and long lifetime against environment and demanding operations
- Robust pedestal with all active parts above the rotary joint, reducing drastically the maintenance and making the system safely and easily relocatable
- FPGA-based indoor ACU extendable to Telemetry+Tracking receiver by simple software upgrade, thus providing a very compact solution down to telemetry over IP.

**ZODIAC
AEROSPACE** 

System Specifications

Pedestal

Azimuth travel range	$\pm 360^\circ$
Elevation travel range	$-7^\circ / + 187^\circ$
Angular velocity	$\geq 25^\circ/\text{s}$ on each axis
Angular acceleration	$\geq 40^\circ/\text{s}^2$ on each axis

Reflector

Single piece aluminum alloy reflector

Servo-control

Static pointing accuracy	$\leq 0.05^\circ$
Tracking accuracy	$\leq 0.3^\circ$
Acceleration lag	$0.1^\circ/\text{s}^2$

Antenna Control Unit modes

Manual, slew, scan, slave, autotrack, program-track(TLE), sun and moon track

Auto acquisition with adjustable signal threshold

Adjustable anti-multipath elevation limit

Tracking memory

Auto-diversity LHCP/RHCP

Tracking Receiver modes

S-band (monopulse) or L+S band (conscan)

Coherent or non-coherent signal acquisition

General characteristics

Power	230 Vac 50-60Hz. 4 kVA
Antenna weight	550 kg

2.40m - El/Az Tracking Antenna

Environmental Specifications

Operating Temperature Range:	
Outdoor equipment	-25 to $+50^\circ\text{C}$
Indoor equipment	$+10$ to $+35^\circ\text{C}$
Operational Wind	
Mean	≤ 80 km/h
Gust	≤ 100 km/h
Survival Wind	≤ 200 km/h
Humidity	
Outdoor	95 %
Indoor	85 %
	non-condensing

Optional items

- ▶ Operator control desk for airborne targets tracking
- ▶ Axial video camera for visual target aiming
- ▶ Acquisition aid antenna
- ▶ 3m radome
- ▶ Gyro inertial unit (shipborne version)
- ▶ 1.8m and 3m reflectors available
- ▶ Trailer-mounted version
- ▶ GPS time / position synchronization (single or differential)



	L+S band Rx	S band Rx
Feed type	Crossed dipole	Central horn
Tracking	Conical scan	8 dipoles monopulse
Receive frequency range	1435-2400MHz	2200 - 2400MHz
Receive polarization	RHCP and LHCP	
-3dB beamwidth	$\pm 3.8^\circ$ @ 2.3GHz	
Axial ratio	≤ 1.5 dB on axis	
G/T @20°C clear sky, 20° elevation 2300MHz	9 dB/K	7.5 dB/K

ZODIAC DATA SYSTEMS

Aérodrome d'Arcachon
33260 La Teste - FRANCE
Tel. +33 (0)5 57 52 76 30

2 rue de Caen
14740 Brettville l'Orgueilleuse - FRANCE
Tel. +33 (0)2 31 29 49 49

5 avenue des Andes
91978 Courtaboeuf - FRANCE
Tel. +33 (0)1 69 82 78 00

3 avenue du Canada
91966 Courtaboeuf - FRANCE
Tel. +33 (0)1 64 86 34 00

contact_zds-fr@zodiacaerospace.com - <http://www.zds-fr.com>

www.zds-fr.com

Z.D.S. reserves the right to change specifications without notice - FFP1634D