

SPARTE Tracking Antennas



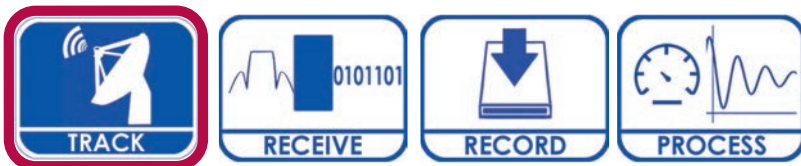
L / S / C
◆
6ft / 8ft / 10ft
◆
SPARTE pedestal

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, very high speed targets with high dynamics, 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.

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Main Features

- High speed Elevation over Azimuth pedestal with acceleration up to $40^\circ/s^2$
- SMC feeds for high speed target tracking
- Tri-band capable feed for future C-band upgrades
- 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

- Simplified user experience with automatic ACU-mode management
- 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
- Indoor ACU with comfortable 17" touch screen for operations with up to 4 tracking inputs (AM + AGC) pairs.

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System Specifications

Pedestal

Azimuth travel range	unlimited
Elevation travel range	-5° / +185° option -15° / +195°
Angular velocity	≥ 30 °/s on each axis
Angular acceleration	≥ 40 °/s² on each axis

Reflector

Aluminum alloy reflector / any kind of payload

Servo-control

Static pointing accuracy	≤ 0.05°
Tracking accuracy	≤ 0.2°
Acceleration lag	0.2°/°/s²

Antenna Control Unit

Manual, slew, scan, slave (2 x inputs), RF tracking, program-track, GPS slaving

Advanced features : Autotracking (automatic ACU modes management), auto acquisition (with adjustable signal thresholds), multipath clipping, centralized remote control for receivers, recorders,...

Tracking signal inputs 4x (AM + AGC)

Auto-diversity LHCP/RHCP, best telemetry channel

Diagnostic tool continuous BIT, servo-control, tracking, Y-factor, logbook, parameters recording

General characteristics

Power standard	110 - 230 Vac 50-60Hz.
power consumption	2.5 kVA peak and 4 kVA with max wind load
Antenna weight	550 kg (1212 lbs)

SPARTE Tracking Antennas

Environmental Specifications

Operating Temperature Range:	
Outdoor equipment	-25 to +50°C +13 to +122°F
Operational Wind in 2.4 m	
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
- ▶ Cable wrap (±360°)
- ▶ Axial video camera for visual target aiming
- ▶ SCM feed up to 1000Hz tracking rate
- ▶ Acquisition aid and omni antennas
- ▶ Low gain switching for short range
- ▶ Single / Dual / Tri-band feed
- ▶ 6ft and 10ft reflectors available
- ▶ Shipborne version (Inertia Measurement Unit and -15° lower EI limit)
- ▶ Trailer-mounted version
- ▶ GPS time / position synchronization (single or differential)
- ▶ IR tracking capability



	1.8 m / 6 ft	2.4 m / 8 ft	3.0 m / 10 ft
Tracking	8 dipoles monopulse		
Receive frequency range	1429 - 1545 MHz / 1755 - 1850 MHz / 2200 - 2400 MHz / 4400 - 5150 MHz		
Receive polarization	RHCP and LHCP		
Axial ratio	≤ 1.5 dB on axis		
-3dB beamwidth @ 2.3GHz	5°	3.8°	2.9°
G/T @20°C clear sky, 10° elevation 2300MHz	6.4 dB/K	9.3 dB/K	11.2 dB/K
Maximum wind for nominal / degraded performance	100 / 120 km/h	80 / 100 km/h	50 / 70 km/h



CONTACTS

North America
11800 Amber Park Drive, Suite 140
Alpharetta, GA 30009
Tel. +1 770 753 4017 Fax: +1 770 753 4022
zds.info@zdsus.com

www.zodiacaerospace.com

EMEA
5 avenue des Andes
91978 Courtabœuf - FRANCE
Tel. +33 (0)1 69 82 78 00
contact_zds-fr@zodiacaerospace.com

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