

OS-PT-25

GPS Automatic Tracking Pedestal

The OS-PT-25 Automatic tracking system has been designed to provide GPS based positioning of high-gain antenna systems to support realtime airborne video and telemetry transmission requirements.



The OS-PT-25 system is based on a heavy duty rugged Pan and Tilt pedestal originally designed for underwater operation. The pedestal provides 45 lb-ft (61 N-m) of output torque on each axis. Heavy-duty ball bearings supporting the output shaft allow it to accommodate heavy payloads up to 100 lbs (45 kg).

Each axis includes a DC brushless stepper motor coupled to very low backlash harmonic gearing. It is designed to allow stalling of the output shafts without damage to the gears, the motors, or control electronics.

The system utilizes a RS-485 communications protocol. Using RS-485 control provides several advantages over RS-232. RS-485 allows communication over longer lengths of cable (1000 feet) and enables the ability for networking multiple nodes.

One cable assembly with a total of four wires (two for power; two for communication) is required to operate the RS-485 / RS-232 tracking system. The system is delivered complete with cable assembly, power supply, Hercules heavy duty tripod, and a RS-232 to RS-485 to USB converter.

The OS-PT-25 may be fitted with a variety of antennas depending on the frequency of operation, polarity, and gain requirements of the system.

Large RHCP dishes, high-gain omni for diversity receive, and up to two Yagi antennas for data comms, can easily be mounted.

The OS-PT-25 pan and tilt pedestal are air-filled and are excellent for above water applications where rain, humidity, and dust are issues.

The Automatic tracking system has been fully integrated with a Piccolo flight control system from Cloud Cap Technology (CCT) and FlightTEK from L3 Communication Geneva Aerospace. The tracking system operates directly from Piccolo Command Center ,MissionTEK as well as OS antenna tracker software.

O P T I M U M S O L U T I O N S

ENGINEERING CONSULTING FIRM

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www.optimumsolution.com

OS-PT-25

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PERFORMANCE

Power:

- Operating Range: 24 - 28 VDC, 1.7 amps (max) per axis @ 24 VDC
- Braking Mode: 24 VDC, adjustable, 0 mA to 1.2 amps per axis
- At Rest (not braking): < 100 mA per axis
- Rotation Speed (160:1 gears): Variable, 0.5 to 10 degrees/second
- Scan Range (Azimuth): 0 to 360 degrees
- Scan Range (Elevation): -10 to 130 degrees
- Resolution: +/- 0.5 degrees (30 arc minutes)
- Control protocol: RS-485, 2-wire half duplex, 8 bit data, 1 stop bit, no parity, no hardware flow control
- Networkability: Up to 32 RS-485 nodes sharing the same cable for power and communication

MECHANICAL

Housing:

- Material: Anodized 6061-T6 Aluminum
- Height: 286 mm (11.25 in)
- Width: 199 mm (7.85 in)
- Main Body Diameter: 107 mm (4.20 in)
- Output Shaft Diameter: 38.1 mm (1.50 in)

Weight :

- Air-filled: 8.7 kg (19.2 lbs)
- Standard Connectors: LPMBH-4-MP
- Housing Mounting: Four 3/8-16 threaded holes in output pan shaft
- Antenna Mounting: Mounting plate, yoke and optional YAGI brackets

Tripod:

- QuickSet Hercules model 4-53021-8 QHT-1 with elevator

ENVIRONMENTAL

- Operating Temperature: -10oC to +50oC (-14oF to 122oF)
- Storage Temperature: -20oC to +60oC (-4oF to 140oF)



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SOFTWARE

- Compatible with Cloud Cap Technology Antenna Plugin software
- Fully integrated with L3 communication Geneva Aerospace MissionTEK software.

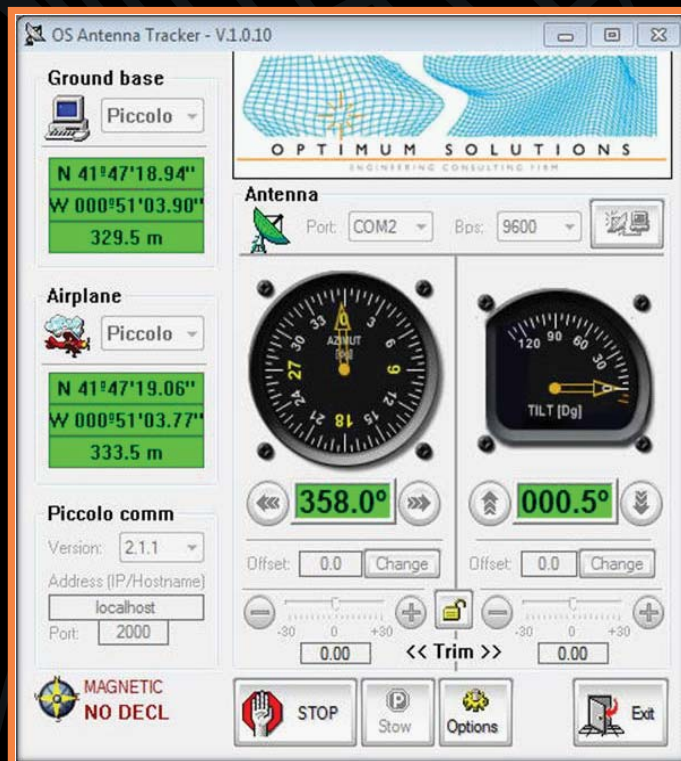
- Standalone Antenna Tracker software:

The positioner GPS coordinates on the ground can be provided by:

- a) Any GPS receiver that delivers the positioner position on the ground using NMEA 0183 format through a serial port.
- b) A GPS coordinates distributed through Cloud Cap Technology' Piccolo Command Center or Operator Interface (OI) IP server.
- c) Fixed values of latitude, longitude and altitude MSL entered by the operator

The Aircraft GPS coordinate can be provided by:

- a) Any GPS receiver that delivers the aircraft position on the ground using NMEA 0183 format through a serial port.
- b) The aircraft' GPS coordinates distributed through Cloud Cap Tecnology' Piccolo Command Center or Operator Interface IP server.



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