

# OS-PT-100

## GPS Automatic Tracking Pedestal

The OS-PT-100 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-100 system is a heavy duty rugged Pan and Tilt pedestal based on the OS-PT-25 tracker system.

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.

As the OS-PT-25, the OS-PT-100 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-100 has been designed specifically to accommodate SILVUS 4x4 MIMO radios with or without bidirectional power amplifiers.

Up two side by side 30" dishes with Left-Right or Horizontal-Vertical feeds can be mounted



The OS-PT-100 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 Piccolo autopilot from Cloud Cap Technology (CCT), Mavlink communication protocol and FlighTEK from L3 Communication . 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](http://www.optimumsolution.com)

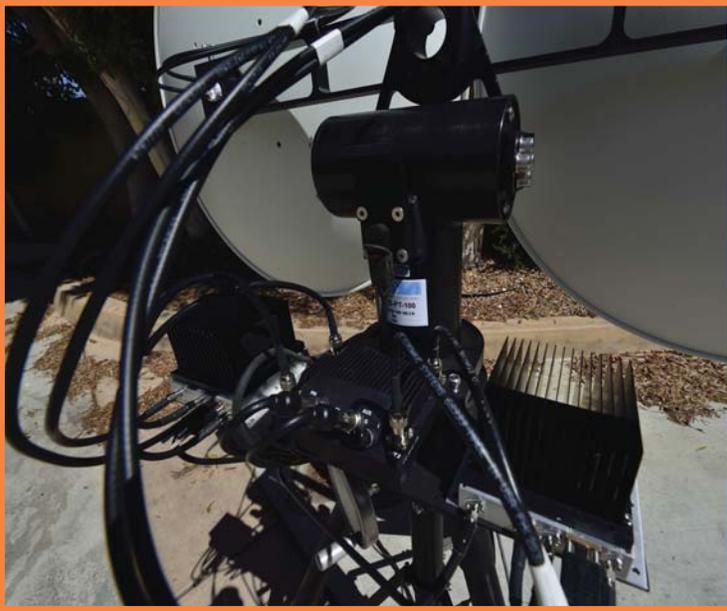
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## GPS Automatic Tracking Pedestal

### 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)

### FREQUENCY BAND OPTIONS:

- L/S Band: 1.7 Ghz to 2.5 Ghz -24 dB R/L 11° HPBW
- C Band: 4 Ghz to 6 Ghz -31 dB R/L 4.7° HPBW



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## SOFTWARE

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

Fully compatible with Mavlink communication protocol

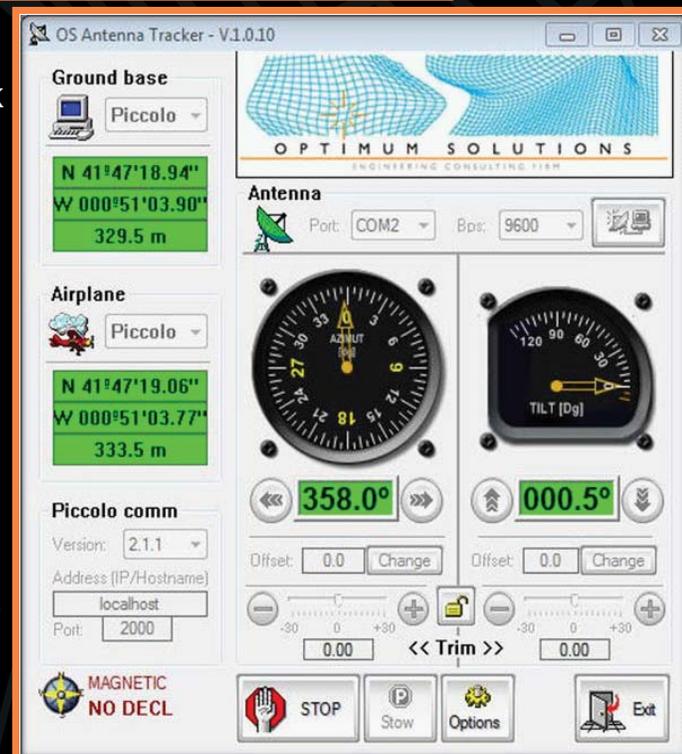
- Standalone Antenna Tracker software:

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.
- c) The aircraft' GPS coordinates using NMEA 0183 format distributed through ports UDP socket



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