

# 123T Antenna Control System

## Satcom & Antenna Technologies Division



### Overview

The Model 123T-1 Antenna Control System provides precision satellite tracking for mobile, transportable and flyaway antennas. The Antenna Control Unit (ACU) is the operator interface point for the system, featuring PC-104 based processing and operator-friendly function menus. The Power Drive Unit (PDU) provides all motor and antenna connections.

### Internal Tracking Receiver Options

The Model 250 receiver is available with L-Band or 70 MHz input. L-Band frequency range is 950-2150 MHz and the tracking C/NO is 40 dB-Hz.

### Tracking Accuracy - Optrack

Optrack provides high performance tracking of stable or inclined orbit satellites with an adaptive self-learning ephemeris modeling mode. The Control System accuracy (excluding non-repeatable mechanical errors) is normally better than 5% RMS (0.03 dB) of the receive beamwidth in winds of 30 mph gusting to 45 mph, satellite inclination of up to 15°, and signal scintillation of up to 2 dB.

### Pointing Accuracy

Normally better than 0.07° RMS (0.05° optional) in winds of 30 mph gusting to 45 mph. This includes all drive train errors, but excludes structural errors between the transducers and RF beam.

### FEATURES

- Optrack, Steptrack & pointing modes
- LCD Display with full alphanumeric readouts
- Simplified operation
- GPS, Flux Gate compass, inclinometer interface
- L, S, C, X, Ku, Ka-band operation including multi-mode
- Supports multiple antennas

### BENEFITS:

- Simplified transportable satellite tracking

### APPLICATIONS:

- Operator interface point for the system

# CPI 123T Antenna Control System

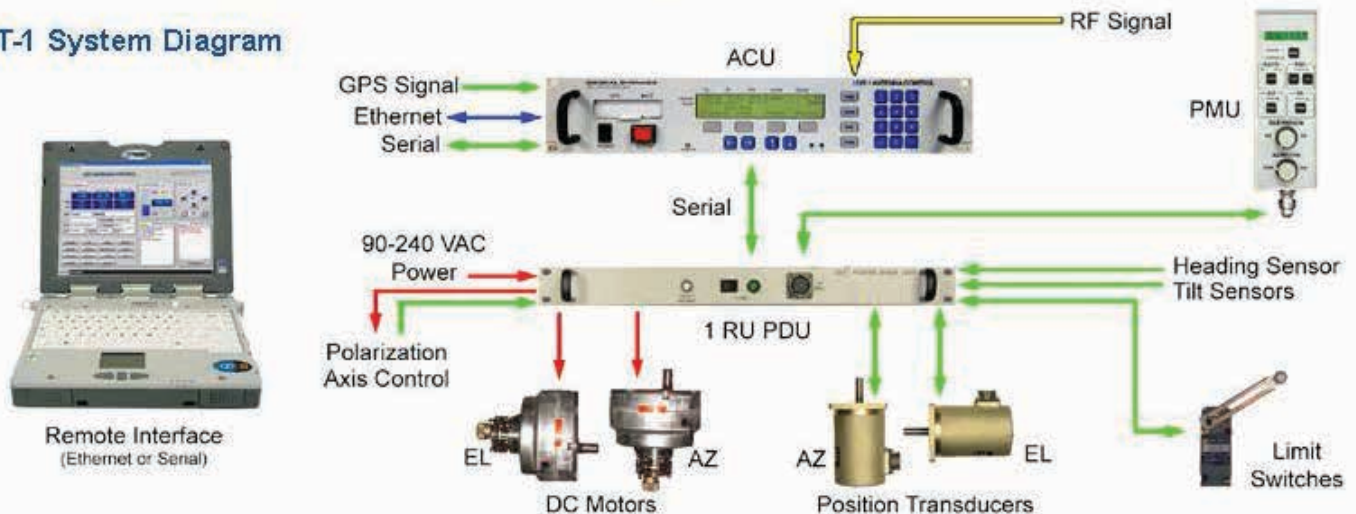
## Options

- Handheld jog controller (PMU)
- Internal L-Band or 70 MHz tracking receiver
- External Model 253 tracking receiver with integral block down converters
- Ethernet, RS422, or RS232 supervisory computer interface

A variety of operational modes are available for quick target acquisition, pointing, and tracking

Operating Modes			
Tracking	Pointing	Acquisition	Other
Optrack Steptrack	Intelsat NORAD* Preset Position Manual Jog	Smart Scan	Maintenance Standby Deploy Stow Calibrate
*Optional			

## 123T-1 System Diagram



Specifications			
<ul style="list-style-type: none"> <li>• CE Certified</li> <li>• Vibration: MIL-STD-810F, M514.5-P1-CAT4-CII (Wheeled Trailer)</li> <li>• Passed DISA Tracking Stability Test</li> </ul>		<ul style="list-style-type: none"> <li>• Auto Calibrate, Auto Deploy, Auto Stow</li> <li>• Single RS 422 Cable for ACU to PDU link</li> <li>• EL current detect circuit used during stow to produce known antenna "clamp down" torque</li> </ul>	
ACU	Size	Weight	Power
2RU rack mount chassis with sides	3.5" H x 19" W x 16.38" D	16 lbs.	Accepts 120/230 VAC, 50/60 Hz, 60W
PDU*			
2RU rack mount chassis with slides	3.5" H x 19" W x 17.13" D	21 lbs.	Accepts 120/230 VAC, 50/60 Hz, 800W Peak
1RU rack mount chassis with slides	1.75" H x 19" W x 17.13" D	18 lbs.	Accepts 120/230 VAC, 50/60 Hz, 800W Peak
Antenna Interface			
AZ/EL/POL DC Motor amplifiers available for 24 - 36V motors. Potentiometer or Resolver Position Feedback supported.			
EL velocity limit and AZ centered switch inputs available.			
Environmental	Temperature	Humidity	
Operating	0 to +50C	95% Non-Condensing	
Storage	-40° to 70°C	95% Non-Condensing	

\* The PDU model varies. Contact GDST for details.

Contact us at [CustomerCareSAT@cpii.com](mailto:CustomerCareSAT@cpii.com) or call us at +1 770-689-2040. The data should be used for basic information only. Formal, controlled specifications may be obtained from CPI for use in equipment design.



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For more detailed information, please refer to the corresponding CPI technical description if one has been published, or contact CPI. Specifications may change without notice as a result of additional data or product refinement. Please contact CPI before using this information for system design.

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