PowerTrack Advanced Tracking System

Complete Solution for Real-Time Video Tracking

The PowerTrack real-time video tracker meets the needs of a wide variety of applications, including weapons targeting, automated airborne surveillance and inspection, and missile tracking from ground, sea, or air. In addition to PowerTrack's military and defense applications, the system may be customized to support many commercial applications, including image stabilization from a moving platform, factory automation and inspection, and more.

Reliable, Expandable Hardware

PowerTrack was developed in cooperation with SVS R&D Systems from Albuquerque, New Mexico, industry leaders in the development of advanced tracking software. Together, Datacube and SVS have a history of successful tracking applications, installed by customers including the US Air Force, US Navy, and major industrial powers, both domestic and international. PowerTrack provides a complete solution for real-time video tracking on a platform that includes:

- Standard VME32 form factor
- Datacube's MaxVideo 250 and a 100 MHz Motorola PowerPC 1604
- Black box solutions
- Integrator packages with customization options

Advanced Algorithms

PowerTrack's flexibility is based upon Datacube's unmatched hardware capabilities. Custom image processing ASICs allow real-time image processing functions to be optimized for target tracking applications, and the addition of the PowerPC enables high-end integration and customization. This technology makes the PowerTrack ideal for demanding target tracking applications in almost any system.

PowerTrack includes four advanced algorithms — binary centroid, gray-scale centroid, rotating edge, and correlation — which enable tracking in almost any scenario. For high-contrast targets, PowerTrack uses the two centroid algorithms (lowest latency, easiest usage) and the edge algorithm (for picking any edge of the target). For high-clutter backgrounds and targets with low contrast, the innovative correlation algorithm allows the user to point-and-track without setting contrast thresholds.

Flexible Architecture

PowerTrack can be configured and customized for a variety of tracking scenarios through an X/Motif GUI or joystick interface. Most PowerTrack parameters have been pre-designed for this flexibility.

The track gate position, track gate size, contrast threshold, algorithm, and boresight can all be controlled either manually or automatically. In addition, special mode logic definitions allow the user to script various track scenarios to enable "hands off" tracking. Along with our partner, SVS R&D Systems, Datacube can quote custom integrations for volume orders to expedite the system integration process.

Datacube Dependability

PowerTrack merges Datacube image processing hardware expertise with proven advanced tracking software to produce a flexible, high-performance, real-time video tracking system. As an ISO 9001-certified company, all stages of Datacube's product development are governed by ISO-compliant procedures, providing both domestic and international customers with the highest possible levels of service, reliability, and product quality. With the PowerTrack's CE mark, and Datacube's well-established network of international distributors providing sales and support, PowerTrack is a highly competitive product for the global market.

- Binary centroid, gray-scale centroid, rotating edge, and correlation algorithms
- Advanced programmable mode logic for customization to specific applications
- Two chassis options: standard commercial or ruggedized
- Multiple interface options: X/Motif GUI, VME command line, or joystick interface
- Two-target tracking capabilities
- Ideal for military COTS usage
- Standard black-box product also available for customization by integrators

Specifications

Video Inputs

- Format: Composite Video (1.0 V p-p, 625/525 Line)
- Standards: RS-170, CCIR, or digital (optional)
- Type: Differential
- Impedance: 75 Ohm

Target Acquisition

- Two modes of operation:
  - Manual
  - Auto

Target Tracking

Track Gate

- Position: Movable to any field of view (FOV) position
- Positioning Modes:
  - Manual
  - Automatic
- Size: Variable from 2% to 50% of the FOV
- Sizing Modes:
  - Manual
  - Auto

Track Pre-processor

- Selectable Statistical Enhancement Threshold (positive, negative contrast)

Track Algorithms

- Binary Centroid (two targets)
- Gray-scale Centroid (two targets)
- Rotating Edge (two targets)
- Correlation (one target)

Platform Filters

- Two-axis PID filters

Boresight

- Two modes of operation:
  - Manual
  - Auto

Breaklock/Coast

- Automatic track loss detection
- Automatic target re-acquisition following breaklock

Video Output

- RS-170
- CCIR
- SVGA

Performance

- Sub-pixel accuracy

System Interface

- Joystick
- A/D output
- VME I/O by TCP/IP sockets
- X/Motif GUI

Environmental Specifications

- Operating Temp: 0° to 55° C
- Storage Temp: -40° to 100° C
- Relative Humidity: 10% to 90% (non-condensing)
- Forced air cooled: 50 LFPM (min)

Ruggedized Chassis

- Call for quotes

Certifications

PowerTrack has been certified to meet CE Mark requirements. Datacube, Inc. is an ISO 9001 certified company.

Additional Information

For related product information, refer to the following Datacube literature:

MaxVideo 250 Data Sheet

PowerTD Data Sheet

D A T A C U B E

Datacube, Inc. • 300 Rosewood Drive • Danvers, MA 01923 • Voice 978-777-4200 • Fax 978-777-3117 • http://www.datacube.com • info@datacube.com