

## VIDEO TRACKERS

# ADEPT33

## 3U VME form factor automatic video tracker

The ADEPT33 is a single Euro-card (3U) VME form factor full-featured automatic video tracker suitable for applications where size and weight are critical.

The unit is primarily software based, and like all ADEPT series trackers the unit is capable of a large number of tracking modes, providing multiple modes of operation. Pre-processors using advanced image processing algorithms are followed by tracking algorithms which include centroid, correlation, edge, multiple target track, phase correlation, combined and SceneLock™

- **Software based, commercial off the-shelf (COTS) product**
- **VME form factor**
- **Multiple analog video inputs and outputs**
- **RS232/422 interfaces built-in**
- **High clutter rejection using Statistical Target Enhancement Pre-processors**
- **Multiple algorithm capability including multiple target detection and multiple object track**
- **Symbology overlay of track window, boresight marker, status etc.**
- **Intelligent Breaklock and Re-acquisition algorithms**
- **Programmable two axis platform drive (PID) filters**
- **NTSC/RS170 and PAL/CCIR (60/50Hz) operation**
- **Menu-Driven PC software allows easy set-up and development**

The ADEPT tracker family has been developed to provide the highest performance solutions in the smallest, fully environmentally proved hardware packages. The majority of customer requirements can be met by the application of standard 'off the shelf' products that have been designed to satisfy the majority of interface and performance requirements without the need for modification.



## Functionality/Modes

### Detection

- Multiple and Single target detection modes available
- Detection Window
  - Position  
Movable to any FoV position
  - Size  
Variable from 4% to 90% of the FoV with manual or adaptive modes (dependent upon selected algorithm)
- Number of Targets: 5 with selectable discriminants and priority options.

### Target Tracking

- Track algorithm selectable from:
  - Centroid
  - Correlation
  - Edge (top, bottom, left, right)
  - Multiple Target Track
  - Phase Correlation
  - Combined
  - SceneLock™
- Track Window
  - Position  
Automatically controlled to follow target to any FoV position
  - Size  
Variable from 4% to 90% of the FoV with manual or adaptive modes (dependent upon selected algorithm)
  - Selectable track pre-processor providing statistical target enhancement with automatic, bipolar, positive and negative threshold options.
- Scene Tracking
  - SceneLock™ algorithm provides robust tracking of non-specific targets

### Platform Filters

- Configurable 2-axis PID filters with rate demand or position demand output

### Boresight

- Reference for the determination of the track errors. Movable for offset tracking.

### Breaklock/Coast

- Automatic two stage track-loss detection and re-acquisition

## Electrical Interface

### Video Inputs

- Analog Inputs (2)
  - Composite Video 1.0Vp-p, 625/525 Line, CCIR, PAL or RS170, NTSC, differential

### Video Outputs

- Analog Outputs (1)
  - Composite video 1.0 V p-p into 75 Ohm, single ended
  - Input video with symbology overlay and selectable enhanced video within detection/tracking window

### Control Interfaces

- Serial Interfaces
  - 3 off RS232 and/or RS422, asynchronous, up to 115,200 baud, providing access to all configuration and status data
- VME Interface
  - Slave interface, A24, D08

### Power Requirements

- +5 V, 2A
- +12V, 0.2A
- -12V, 0.2A

## Mechanical

### Board size

- Single Euro (100 mm x 160 mm) Width 4HP (1 slot)

### Connectors

- 1 x 96 Way DIN41612
- Analog Video 4 x Coaxial
- Serial comms 1 x 25 Way micro 'D', Tyco 094-4406-7002

## Environmental

### Rugged Convection

- Temperature
  - Operating: -40°C to +70°C (with 300 ft/min airflow)
  - Storage: -55°C to +85°C
- RH: Up to 95% non condensing
- Vibration
  - Sine: 10g from 15 to 2000Hz
  - Random: 0.04g<sup>2</sup>/Hz from 15 to 2000Hz
- Shock: >30g 11msec. Sawtooth

### Rugged Conduction

- Temperature
  - Operating: -40°C to +70°C
  - Storage: -55°C to +85°C
- RH: Up to 95% non condensing
- Vibration
  - Sine: 10g from 15 to 2000Hz
  - Random: 0.1g<sup>2</sup>/Hz from 15 to 2000Hz
- Shock: >40g 11msec. Sawtooth

Octec has over 300 man years of experience in applied image processing and is one of the leading independent suppliers of 'commercial-off-the-shelf' video tracking and image processing systems to the global aerospace market. Part of Radstone Technologies' Embedded Computing business, virtually every major European and US aerospace prime contractors is an Octec customer.

Octec's engineering expertise encompasses not only the hardware and software design of video trackers and image processing elements, but how they are applied to provide new or improved system capabilities. Octec also possesses great expertise in a wide range of complimentary technologies. These include system management processing, digital and analog interfacing and signal distribution as well as electro optical sensor and overall systems integration for applications in the airborne, land and marine environments.



**Octec Limited**  
The Western Centre  
Western Road  
Bracknell RG12 1RW  
England

Tel: +44 1344 465 200  
Fax: +44 1344 465 201  
Email: sales@octec.co.uk

**Octec US West office**  
14275 Parkside Court  
Chino Hills, CA 91709  
USA

Tel: 909 627 4816  
Fax: 626 608 3511  
Email: sales@octec.com