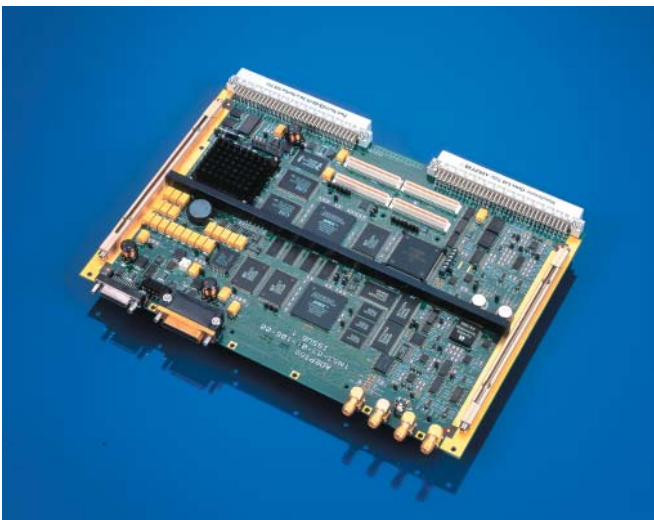


VIDEO TRACKERS

ADEPT60

6U VME bus automatic video tracker/image processor



The ADEPT60 is a double Euro-card (6U) VME full-featured automatic video tracker and image processor. It retains the flexibility of the ADEPT36, but has a more powerful processing capability. Adding to the multiple inputs and outputs of the earlier trackers, it has a facility for the input of high speed digital data directly from EO sensors. The provision of a PMC site allows ADEPT60 greater flexibility in the provision of additional input video formats and image processing functionality.

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™.

Designed to operate within the VME environment and available in both convection and conduction cooled formats the ADEPT60's modes and functions can be controlled via the VME bus or by the on-board RS232/422 serial links.

- Commercial and Extended environments
- Fully VME bus compatible
- Multiple analog video inputs and outputs
- High speed digital video input
- On board PMC interface
- VME, 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



ADEPT60 with optional PMC card that can add even greater capability

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.

ADEPT60 SPECIFICATIONS

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 (optionally 10) 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 is run in parallel with Target Track and Detection modes. Provides “true scene” relative moving target detection and track modes.

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

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 Technology’s 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.

Electrical Interface

Video Inputs

- Analog Inputs
 - 2 on conduction cooled cards and 4 on convection cooled cards
 - Composite Video 1.0Vp-p, 625/525 Line, CCIR, PAL or RS170, NTSC, differential
- Digital Input (1)
 - Up to 16 bit parallel with pixel clock rates up to 40 MHz

Video Outputs

- Analog Outputs (2 or 4)
 - 2 on conduction cooled cards and 4 on convection cooled cards
 - Composite video 1.0 V p-p into 75 Ohm, single ended
- Output 1
 - Input video with symbology overlay and selectable enhanced video within detection/tracking window
- Output 2
 - Input video with no symbology overlay
- Output 3 (convection cooled only)
 - Mirror of Output 1
- Output 4 (convection cooled only)
 - Mirror of Output 2

Control Interfaces

- DC Analog
 - 4 off ± 10 Vdc inputs for joystick demands or sensor FoV tellbacks.
 - 2 off ± 10 Vdc outputs normally used for platform rate commands
- Serial Interfaces
 - 4 off RS232 and/or RS422, asynchronous, up to 115,200 baud, providing access to all configuration and status data
- VME bus Interface
 - Slave interface, A24, D16, providing bidirectional communication and access to all configuration and status data

PMC Site

- On board location for a PMC module to Vita 20-200X
 - 32 bit PCI interface
 - 16 bit bidirectional digital video interface

Power Requirements

- +5 V, 2A
- +12V, 0.15A
- -12V, 0.15A

Mechanical

Board size

- Double Euro (233.4 mm x 160 mm) Width 4HP (1 slot)

Connectors

- Backplane
 - 2 x 96 Way DIN41612 plugs VME bus J1 and J2
 - Optional P0 for digital video input (conduction cooled cards only)
- Front Panel (convection cooled cards only)
 - Analog Video 4 x SMA
 - Serial comms 1 x 25 Way micro ‘D’, ITT Cannon MDSM-25PE-Z10-VR17
 - Digital video 1 x 51 Way micro ‘D’, CINCH DCDM51PCBR

Environmental

Rugged Convection

(Standard VME bus with stiffening)

- 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: 0.04g²/Hz from 15 to 2000Hz
- Shock: >30g 11msec. Sawtooth

Rugged Conduction

(IEEE 1101.2 compliant card)

- 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: 0.1g²/Hz from 15 to 2000Hz
- Shock: >40g 11msec. Sawtooth



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