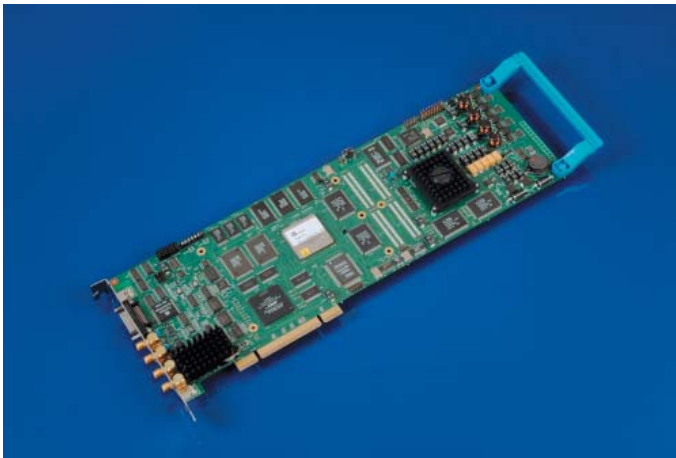


VIDEO TRACKERS

ADEPT64

PCI compatible automatic video tracker/image processor



*PCI format video
tracker/image
processing module*

The ADEPT64 is a new and compatible variant in the ADEPT range of automatic video trackers/image processors from OCTEC. It offers the performance of the ADEPT60 (6U VME) in the PCI format. The provision of a PMC site allows ADEPT64 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 PC environment and fully PCI compatible the ADEPT64 requires no external hardware support beyond a standard motherboard. The unit's modes and functions can be controlled via the PCI bus or by the onboard RS232/422 serial links.

- Software based, commercial off the shelf (COTS) product
- Ideally suited to simulator and training systems
- Fully PCI bus compatible
- Multiple analog and digital video input
- High speed digital video input
- On board PMC interface
- 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
- Intelligent Breaklock and Re-acquisition algorithms
- RS170 and CCIR (50/60Hz) auto operation 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.

ADEPT64 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

Electrical Interface

Video Inputs

- Analog Inputs (2)
 - Composite Video 1.0Vp-p, 625/525 Line, CCIR, PAL or RS170, NTSC, differential
- Digital Input (1) (Requires additional adapter)
 - Up to 16 bit parallel with pixel clock rates up to 40 MHz

Video Outputs

- Analog Outputs (4)
 - Composite video 1.0Vp-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 (Requires additional adapter)
 - Mirror of Output 1
- Output 4 (Requires additional adapter)
 - Mirror of Output 2

Control Interfaces

- DC Analog (Requires additional adapter)
 - 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
- PCI Interface
 - 32 bit Slave interface
 - Specification Rev 2.1

PMC Site

- On board location for a PMC module to Vita 20-200X

Power Requirements

- +5 V, 2A
- +12V, 0.1A
- -12V, 0.1A

Mechanical

Board size

- Standard length PCI

Connectors

- Standard PCI connector
- Backplane
 - Analog Video 4 x SMA
 - Serial comms 1 x 25 Way micro ‘D’, ITT Cannon MDSM-25PE
 - PMC connector for additional inputs and outputs

Environmental

Rugged Convection

- Temperature
 - Operating: 0°C to +55°C (with 300 ft/min airflow)
 - Storage: -40°C to +85°C
- RH: 5% to 95% non condensing

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.



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