



ADEPT60

6U VME bus automatic video tracker/image processor

Features

- Multiple algorithm capability including multiple target detection and multiple object track
- Statistical target enhancement pre-processors for high clutter rejection
- Intelligent "Breaklock" and re-acquisition algorithms
- Platform drive filters
- Onboard serial links
- On board PMC interface
- Composite video input / output
- High speed digital video input
- Symbology overlay
- 6U VME card
- PC control software

The ADEPT60 is a full-featured 6U VME bus automatic video tracker and image processor. It maintains software compatibility with the entire line and has the powerful processing capability of our latest designs.

The card is particularly well suited to ruggedized military applications and is currently in use worldwide in a wide range of military vehicles.

The card is capable of multiple operating modes. Pre-processors using advanced image processing algorithms are followed by tracking algorithms which include centroid, edge, multiple target track, phase correlation, combined and SceneLock. It can also provide real-time electronic video stabilization using the SceneLock algorithm.

Analog and high speed digital video interfaces provide widespread compatibility with both the latest and legacy EO sensors.

The provision of a PMC site allows greater flexibility in the provision of

additional input video formats and image processing functionality.

This commercial off-the-shelf (COTS) card fits into any standard 6U VME rack and is available in both convection and conduction cooled formats

In common with other products in the ADEPT range, the ADEPT60 incorporates two axis PID platform drive filters and onboard serial links.

Intuitive 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-proven hardware packages. Field-proven on military and civilian platforms on land, sea and air, GE Intelligent Platforms' image processing products incorporate the benefits of unrivalled application experience.



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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
 - 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.

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 track-loss detection and re-acquisition

Specifications

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
 - Base CameraLink digital video via additional GE Intelligent Platforms PMC interface module.

Video Outputs

- Analog Output (2)
 - Composite video 1.0 V p-p into 75 ohm
 - Single-ended
- Output 1
 - Selectable input video with symbology overlay
- Output 2
 - Selected input video

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

Power Requirements

- +5 V, 1 A
- +12 V, 0.15 A
- -12 V, 0.15 A

Board Size

- Double Euro (233.4 mm x 160 mm) Width

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

- Temperature
 - Operating: -40°C to +70°C (with 300 ft/min airflow)
 - Storage: -55°C to +90°C
- Relative Humidity
 - Up to 95% non-condensing
- Vibration
 - Sine: 10g from 15 Hz to 2000 Hz
 - Random: 0.04g²/Hz from 15 Hz to 2000 Hz
- Shock
 - 30g 11 msec. Sawtooth

Rugged Conduction

- Temperature
 - Operating: -40°C to +70°C
 - Storage: -55°C to +90°C
- Relative Humidity
 - Up to 95% non-condensing
- Vibration
 - Sine: 10g from 15 Hz to 2000 Hz
 - Random: 0.1g²/Hz from 15 Hz to 2000 Hz
- Shock
 - 40g 11 msec. Sawtooth

About GE Intelligent Platforms

GE Intelligent Platforms, a General Electric Company (NYSE: GE), is an experienced high-performance technology company and a global provider of hardware, software, services, and expertise in automation and embedded computing. We offer a unique foundation of agile, advanced and ultra-reliable technology that provides customers a sustainable advantage in the industries they serve, including energy, water, consumer packaged goods, government and defense, and telecommunications. GE Intelligent Platforms is a worldwide company headquartered in Charlottesville, VA and is part of GE Home and Business Solutions. For more information, visit www.ge-ip.com.

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