ADEPT74

High resolution PCI Express automatic video tracker/image processor

Features

- High resolution digital inputs via DVI-D and CameraLink
- Simultaneous multiple target detection and tracking
- Statistical target enhancement pre-processors for high clutter rejection
- Intelligent "Breaklock" and re-acquisition algorithms
- Platform drive filters
- Onboard serial links
- Composite video input/output
- Symbology overlay
- PCI Express half length card
- PC control software

The ADEPT74 introduces high resolution digital image quality and multi-target tracking to the extensive range of GE Intelligent Platforms rugged, real-time video trackers and image processors.

The card is particularly well suited to evaluation, simulation, training and range instrumentation applications.

CameraLink, DVI-D and composite video inputs provide widespread compatibility with both the latest and legacy sensors.

The latest high speed processor is coupled with a brand new memory architecture to support sophisticated image processing operations in real time on high resolution images.

This commercial off-the-shelf (COTS) card fits into any standard PC with a PCI Express bus.

In common with other products in the ADEPT range, the ADEPT74 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

Target Cueing
- True multi-target simultaneous cue and tracking windows
  - Cue window 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 simultaneous cued targets: 5

Target Tracking
- True multi-target tracking (concurrent with target cueing)
- Track algorithm selectable from:
  - Centroid
  - Phase Correlation
  - Combined
  - SceneLock

Track Windows
- Multiple track windows with positions automatically controlled to follow targets to any FoV position
- Track window size variable from 4% to 85% 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

Analog ADEPT74

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

Video Outputs
- Analog Outputs (2)
  – Composite video 1.0 V p-p into 75 Ohm
- Output 1
  – Selectable input video with symbology overlay
- Output 2
  – Selected input video

Digital ADEPT74

Video Input
- Digital input (1)
  – DVI-D
  – Resolutions 1024x768 P60 and 800x600 P60

Video Output
- Digital output (1)
  – DVI-D
  – Resolutions 1024x768 P60 and 800x600 P60

Hybrid ADEPT74

Video Inputs
- Analog Input (1)
  – Composite video 1.0Vp-p, 625/525 Line, CCIR, PAL or RS170, NTSC
- CameraLink Input (1)
  – Base CameraLink

Video Output
- Analog Output (1)
  – Composite video 1.0 V p-p into 75 Ohm

Control Interfaces

Serial Interfaces
- 4 off RS232 and/or RS422, asynchronous, up to 115,200 baud, providing access to all configuration and status data

PCI Express Interface
- Specification Rev 1.1

Power Requirements
- +12V, 1.4A

Board Size
PCI Express full height half length card as per the PCI Express Card Electromechanical Specification Revision 1.1

Connectors
- Standard PCI Express x4 connector
- Analog video: 4 x SMA
- DVI connector: DMS-59 with supplied break out cable to two standard DVI-D connectors
- Serial comms: 1 x 25 Way micro 'D', ITT Cannon MDSM-25PE
- CameraLink connector: High Density SDR-26

Note that the card can be factory configured for DVI-D or analog video, but not both at the same time. This feature is not user configurable.

Environmental

Rugged Convection
- Temperature
  – Operating: 0°C to +70°C (with 300 ft/min airflow)
  – Storage: -55°C to +85°C
- Relative Humidity
  – Up to 95% non-condensing

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.

GE Intelligent Platforms Contact Information

Americas: **1 800 433 2682** or **1 434 978 5100**
Global regional phone numbers are listed by location on our web site at **www.ge-ip.com/contact**

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