



AIM12

Compact stand alone format automatic video tracker/image processor

Features

- Compact and low power consumption
- 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
- Composite video input/output
- Digital video support over expansion interface including;
 - LVDS parallel digital video
 - CameraLink digital video
- Symbology overlay
- Image processing functions such as real-time electronic scene-based image stabilization
- PC control software

The AIM12 is the smallest and lowest power full-featured variant in the GE Fanuc range of automatic video trackers and image processors. Despite its size, it maintains software compatibility with the entire line and has the powerful processing capability of our latest designs.

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.

The card is particularly well suited to applications where size and weight are critical, such as unmanned vehicles and compact electro-optical systems.

Analog and optional CameraLink and LVDS video inputs provide widespread compatibility with electro-optical sensors.

This commercial off-the-shelf (COTS) card operates as a stand alone unit allowing great flexibility in board location.

In common with other products in the range, the AIM12 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 Fanuc's 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.

Stabilization

- Real-time, high performance video stabilization using SceneLock algorithm.

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)
 - Composite video 1.0Vp-p, 625/525 Line, CCIR, PAL or RS170, NTSC, differential
- Digital Input (1) (Requires additional GE Fanuc proprietary mezzanine expansion board)
- Digital Interfaces include:
 - Base CameraLink digital video
 - LVDS parallel digital video

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 (Requires additional GE Fanuc proprietary mezzanine expansion board)
 - 2 off ± 10 Vdc outputs normally used for platform rate commands
- Serial Interfaces
 - 2 off RS232 and 2 off RS422, asynchronous, up to 115,200 baud, providing access to all configuration and status data

Power Requirements

- +5 V, 1 A

Board Size

- 90 mm x 77 mm

Connectors

- Analog Video 4 x MMCX jack
- RS232 Serial: 2 mm pitch 2 row x 3 pin header. Keyed and lockable
- RS422 Serial: 2 mm pitch 2 row x 5 pin header. Keyed and lockable
 - Power: 2 mm pitch 1 row x 4 pin header. Keyed and lockable
 - Connector for GE Fanuc proprietary mezzanine expansion board

Connectors can be arranged either parallel or perpendicular to the board surface

Environmental

Rugged Convection

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

Environmental Specifications subject to mounting

About GE Fanuc Intelligent Platforms

GE Fanuc Intelligent Platforms, a joint venture between General Electric Company (NYSE: GE) and FANUC LTD of Japan, is an experienced high-performance technology company and a global provider of hard-ware, 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 Fanuc Intelligent Platforms is a worldwide company headquartered in Charlottesville, VA and is part of GE Enterprise Solutions. For more information, visit www.gefanuc.com.

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Additional Resources

For more information, please visit the GE Fanuc Intelligent Platforms web site at:

www.gefanuc.com

