Cores and components
for thermal imaging applications

FLIR

Vilga

Video Tracking and Image Processing Electronics

The VILGA video processor offers video tracking from multiple video sources installed in the optical payload. Targets are highlighted and overlaid on screen during tracking.

The user can select a given target amongst several proposed by the tracker. Selecting and engaging a target in tracking mode is made by the user from the hand grip controller. Once engaged the video tracker will drive the turret to the target.

The VILGA image processor
The VILGA processor card combines multi-tasks image processing with overlaid graphics.

It also offers a Picture-in-Picture mode (PIP) where two sensors can be displayed on a single display. The user can select which sensor to display as full screen in the overlaid PIP mode. The PIP mode feature is particularly useful when using the Spotter Scope (SSC) in combination with the TV zoom camera.

Electronic stabilization
Vilga also offers electronic stabilization of images from external sensors. This can be useful when cameras are installed on high poles or in other environments susceptible to movement caused by wind or other factors.

Vilga tracker key features:
- VideoTracker embedding the latest image processing algorithms
- High quality overlay features for MMI
- Picture-in-Picture mode for displaying several video sources on a single screen
- Electronic stabilisation of images from external sensors
- VILGA is a ruggedised card designed to offer embedded image processing features in the smallest possible footprint.
- VILGA operates under a robust real time operating system (RTOS) with minimum latency time for critical tasks.
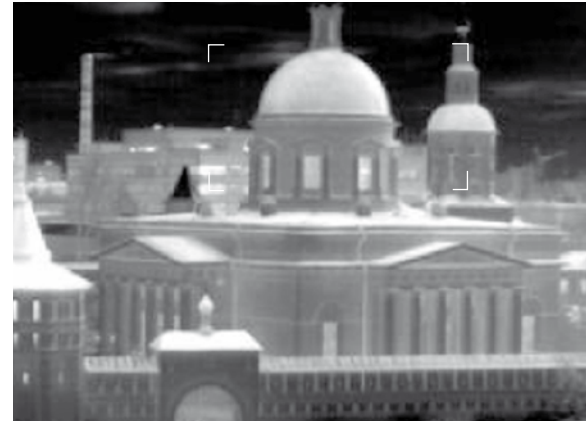
Picture-in-Picture mode

The Vilga video tracking board will allow the camera to follow an object as long as it can be seen.

Vilga:

Technical specifications

MAIN SPECIFICATIONS

CORRELATION MODE

Video-tracker modes	Correlation, Centroïd, scene base
Min. target Signal/Noise ratio	4%
Min. target contrast	3%
Min. target size	8x8 pixels
Max. target size	160x160 pixels
Tracking window	Dynamically sized
Target aspect ratio	Up to 1:6 in any direction
Max. target velocity	32 pixels/frame at 50 Hz
Tracking accuracy	1/10th pixel
Tracker sampling rate	50 Hz PAL or 60 Hz NTSC
Latency	40 ms (2 frames) at 50 Hz

SCENE MODE

Minimum Feature Contrast	12.5 grey levels : 4.9%
Minimum number of feature points	5
Maximum number of feature points	12
Maximum Feature Horizontal Displacement between two frames	24 pixels : 3.4% FOV
Maximum Feature Vertical Displacement between two frames	28 pixels : 4.9% FOV
Maximum Target to Boresight Error update rate	60 Hz
System delay	40 ms

INTERFACES

Size	115 mm x 60 mm x 18 mm
Weight	130 g
Analogue video inputs	x3 PAL or NTSC
Analogue video outputs	x2 PAL or NTSC (x1 with overlay, x1 raw)
Voltage	5-32 V DC
Power	5 W
UART's	x4 RS-422/RS-422 configurable Multiple integrated input/output command protocol
Overlay graphics	32 bits color

ENVIRONMENTAL

Operational temperature	-40°C to +70°C
Storage temperature	-45°C to +85°C
Humidity	95% relative
Randam vibration	0.04g²/Hz from 15Hz to 2000Hz
Sine vibration	10g peak from 15 Hz to 2000 Hz
Shock	>30g sawtooth 11 ms

SOFTWARE

Vilga Demo frontal software (Windows®)
Communication Protocol description

CC_0308_0010_EN

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