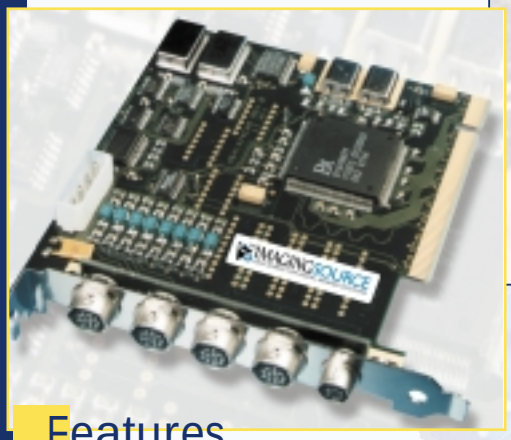
MACHINE VISION TECHNOLOGIES

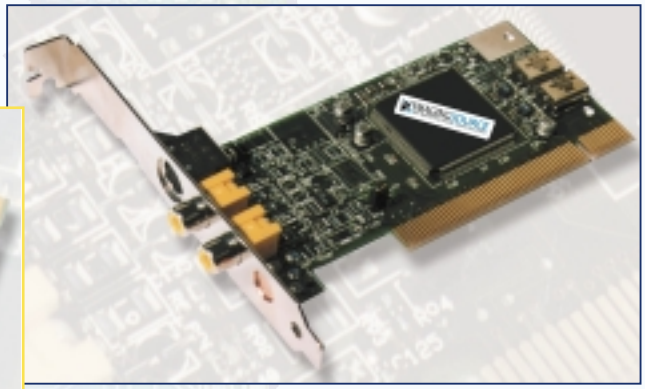
HALCON

THE SOFTWARE SOLUTION FOR MACHINE VISION APPLICATIONS

Frame Grabber Interface

for The Imaging Source DFG/LC1 and DFG/LC2





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Features

- Supported operating systems: Windows NT 4.0 & Windows 2000
- Multiple frame grabber boards
- Synchronous and asynchronous grabbing
- External trigger (DFG/LC2 only)
- Subsampling
- Cropping arbitrary parts of an image
- Optional: Automatic gain control
- Optional: Gamma correction
- Software control of brightness, contrast, and hue
- Software control of the type of trigger signal
- Software control of horizontal and vertical smoothing filters
- Setting/reading digital input and digital output

Note: The frame grabber may support additional features not integrated in HALCON so far. Please contact the vendor directly.

MVTec Software GmbH

HALCON Frame Grabber Interface for The Imaging Source DFG/LC1 and DFG/LC2

Revision: 1.13

Description of Parameters for open_framegrabber():

Name	'DFG-LC'	The name of the HALCON frame grabber interface.
FGWidth	1, 2, 4, width	The desired image resolution. Use '1' for full resolution, '2' for subsampling by factor 2, and '4' for subsampling by factor 4.
FGHeight	1, 2, 4, height	The desired image resolution. Use '1' for full resolution, '2' for subsampling by factor 2, and '4' for subsampling by factor 4.
Width	0, width	The width of the desired image part ('0' stands for for the complete image).
Height	0, height	The height of the desired image part ('0' stands for for the complete image).
StartRow	0, row	The row coordinate of the upper left pixel within the desired image part.
StartColumn	0, column	The column coordinate of the upper left pixel within the desired image part.
Field	'first', 'second', 'next', 'interlaced', 'progressive'	Select 'interlaced' or 'progressive' scanning. When subsampling the image (e.g., FGWidth=FGHeight=2), you can avoid line jittering by choosing 'first' or 'second'. In this case the image is aligned to the even/odd field; in the 'next' case you can achieve full field rate, but there will be a line jitter as every field is grabbed.
Bits	8, 16, 24	Number of bits per pixel: Grayscale (8 bits) or color (16 and 24 bits). The 16 bit mode is used to reduce the PCI bus load. You will get an 24 bit HALCON image in this case, too.
ColorSpace	—	Ignored.
Gain	—	Ignored.
ExternalTrigger	'true', 'false'	Activate/deactivate external triggering. External triggering is supported by the DFG/LC2 board only.
Generic	'NTSC', 'PAL', S-AUTO', S'PAL', 'SECAM', 'AUTO', 'S-NTSC', S-SECAM'	The generic parameter is used to specify the video signal: 'NTSC', 'PAL', 'SECAM', or 'AUTO'. For the parameterization of an DFG/LC2 board, please use 'S-xxx' to specify a S-Video input signal (otherwise, a composite signal is assumed). Parameterizing a DFG/LC1 board the distinction between S-Video and composite signals is implicitly done via the 'Port' setting.
Device	'0', '1', '2', ...	The number of the frame grabber board (passed as a string!).
Port	DFG/LC1: 0, 1, 2 DFG/LC2: 0, 1, 2, 3	Specifies the video input (together with the parameters 'Bits' and 'Generic'). For a DFG/LC1 board '0' and '1' are used for composite video, '2' is used for S-Video. An DFG/LC2 board can read S-Video or composite signals from all ports. In this case, the distinction between S-Video and composite is done via the 'Generic' parameter.
LineIn	—	Ignored.

Description of Parameters for set_framegrabber_param():

'volatile'	'enable', 'disable'	Grayscale only. In the volatile mode the two frame grabber interface buffers are used directly to store HALCON images. This is the fastest mode avoiding to copy raw images in memory.
'agc'	'enable', 'disable'	Enables or disables automatic gain control.
'brightness'	0 – 255	Changes brightness of an image. Default: 128.
'contrast'	0 – 511	Changes contrast between 0% and 200%.
'gamma'	'enable', 'disable'	Switch gamma correction on (enable) and off (disable).
'hue'	0 – 255	Changes the hue of a color image (no effect on grayscale images). Default: 128.
'chromU'	0 – 511	Changes U-value of color saturation. Default: 254.
'chromV'	0 – 511	Changes V-value of color saturation. Default: 180.
'synclevel'	75, 125	Sets sync level to 75 mV or 125 mV.
'trigger_signal'	'rising', 'falling'	Specify the desired type of trigger signal: rising (default) or falling edge.
'horfilter'	0, 1, 2, 3	Turns on a horizontal interpolation filter. There are 3 filters available: 1 (weak filtering), 2 (normal filtering) and 3 (strong filtering); 0 turns the filter off.
'vertfilter'	0, 1, 2, 3	Turns on a vertical interpolation filter. There are 3 filters available: 1 (weak filtering), 2 (normal filtering) and 3 (strong filtering); 0 turns the filter off. Attention: The filter mode '2' ('3') can only be used in combination with horizontal subsampling of at least factor 2 (4).
'grab_timeout'	100 – 327680	Sets a timeout value for grabbing (in ms). After grab_timeout milliseconds the grabbing routine returns with a timeout error.
'suppress_errors'	'true', 'false'	When set to 'true', FIFO overruns (resulting from PCI transfer problems) are ignored; otherwise, an error is returned.
'suppress_error_beep'	'true', 'false'	When set to 'false', a "Beep" is produced every time a FIFO overrun occurs. Beeping can be switched off by setting suppress_error_beep to 'true'.
'show_internal_errors'	'true', 'false'	Specify whether the frame grabber interface should pop up an alert box in case of an error or not.
'continuous_grabbing'	'enable', 'disable'	Sets grabbing mode from single frame capture to continuous mode. If the continuous mode is enabled, the frame grabber board will grab all the time. In this mode you can achieve full frame rate (or full field rate when subsampling the image).
'digital_output'	'enable', 'disable'	Sets digital output (supported by the DFG/LC2 board only).
'camera_sync'	'enable', 'disable'	Turns camera sync-generator on or off (supported by the DFG/LC2).

See the HALCON documentation for a detailed description of these generic frame grabber operators and visit http://www.mvtec.com/halcon/framegrabber/ for updates and a complete list of current HALCON frame grabber interfaces.

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