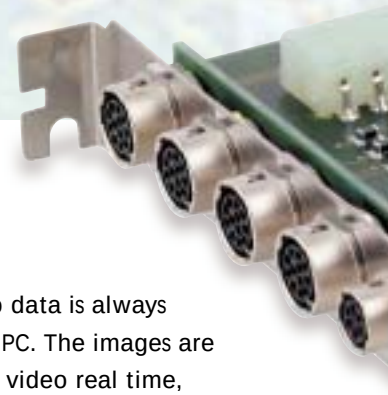
Eagle

High Quality Color- and Monochrome Frame Grabber for Industrial Image Processing

- Image Resolution 768x576
- Multiple Board Operation
- CCIR / PAL / NTSC / SECAM
- 4 x 12-pole Hirose Connectors with Power Supply too
- Trigger Input (Synchronous Trigger)
- Video Controlled Output for Flash Synchronization
- 1 Digital Input and 1 Digital Output (each TTL)
- Fast Switching between the Channels
- Overlay Function via Direct Draw
- Software-Development-Kit for Windows 95/98, Windows NT and Windows 2000
- HALCON Driver Available

Eagle for Industrial Image Processing



The EAGLE is a Frame Grabber combining the features of an industrial product like an external trigger and industrially suitable plug-in connectors at an extraordinary value for money. It is 100% downwards compatible against the FALCON(plus) Frame Grabber board.
It offers video input connectors for up to 4 monochrome a/o composite and Y/C color cameras. All current videostandards like PAL, NTSC and SECAM are supported. Especially cameras with a 12-pole Hirose connector (e.g. TELI, Sony, Pulnix, Hitachi, Jai,...) can be connected via 1:1 cable with an EAGLE. Up to 4 cameras can be power supplied via video connection cables out of the PC. Overload protection is provided by a 2A reversible fuse on the EAGLE. The connected cameras can be synchronized by the EAGLE. In this mode the input multiplexer can be switched without loss of a field.

Settings

EAGLE allows various regulations of the digital image data like changing the image size, the image section, the contrast, the brightness, the color saturation and many more. So that critical video sources can be grabbed, the EAGLE has a special mode which compensates for critical synchronization behavior and allows images to be grabbed in a higher quality.

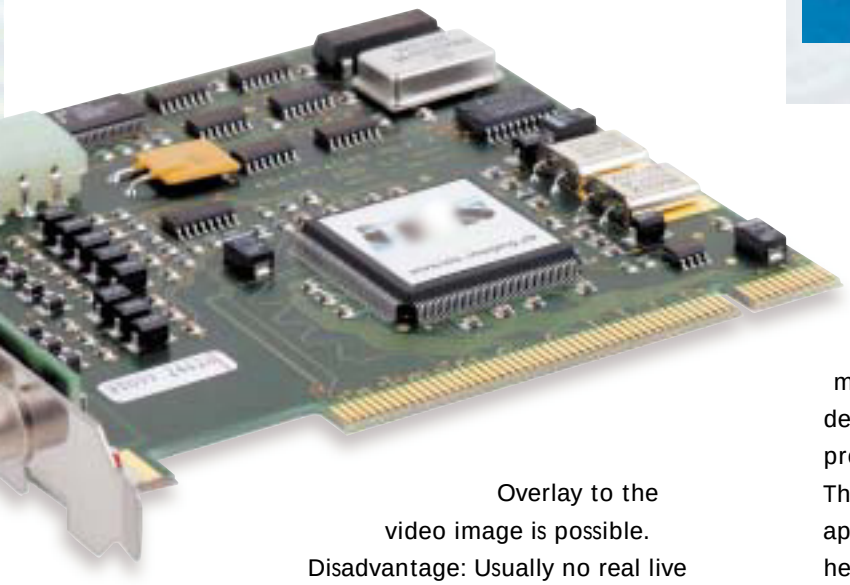
Image Displaying

Displaying the digitized video data is always done on the VGA screen of a PC. The images are transmitted via the PCI bus in video real time, without almost any CPU-load. They are then presented as a live image on the VGA monitor. EAGLE supports all DirectDraw modes: primary surface, overlay surface and backbuffer mode as well as a standard bitmap mode.

Direct Draw

DirectDraw is a Microsoft specified interface for the presentation of video data with Windows.
Until recently frame grabber cards without individual image memory had two presentation possibilities:

1. Direct transmission into the VGA card
   Advantage: Real live image with almost no CPU-load.
   Disadvantage: Image data overwrote all informations on the screen. The video image would always being in the foreground.
2. Indirect image presentation via the PC system
   Advantage: Windows controls the image display.



Overlay to the video image is possible.
Disadvantage: Usually no real live image and CPU is working up to 100% towards image display.

DirectDraw combines the advantages of both varieties. Real live image with the possibility of overlaying the video image with dialogues, text graphics.

Supported Color Formats with Image Displaying

EAGLE support a number of color modes for storage and displaying images. Depending on the modes various amounts of data have to be transmitted via the PCI bus.
This results in the PCI-bus-load being dependent on the selected color modes. Color formats with EAGLE can be chosen from: RGB 32, RGB24, RGB 16, RGB15, Y8 (grey scale), YUV 4:2:2

Software Development Kit

A comprehensive SDK makes EAGLE be of unspoken power. Only with this SDK makes the utilisation of all performance features possible. A great number of flexible SDK-functions except for image displaying and storage is offered to the user.
Image sequences are provided with a ring buffer or a list with interlocked image files. All display modes of Windows are supported today. For the demonstration of effectiveness of the driver a demo program comes with the product.
The Microsoft Visiual C/C++ written source code of this applications shows the programming of the card and helps solving the tasks. EAGLE further support Visual Basic, Borland C++ and Delphi.

Further Drivers

TWAIN, Video for Windows, HALCON, MIL support

Areas of Typical Use

Automatization, Measurement, Industrial Image Processing in Machine- and Plant Engineering, Security market.

agle for Industrial Image Processing

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Ordering Information

- IS-EAGLE

Scope of Delivery

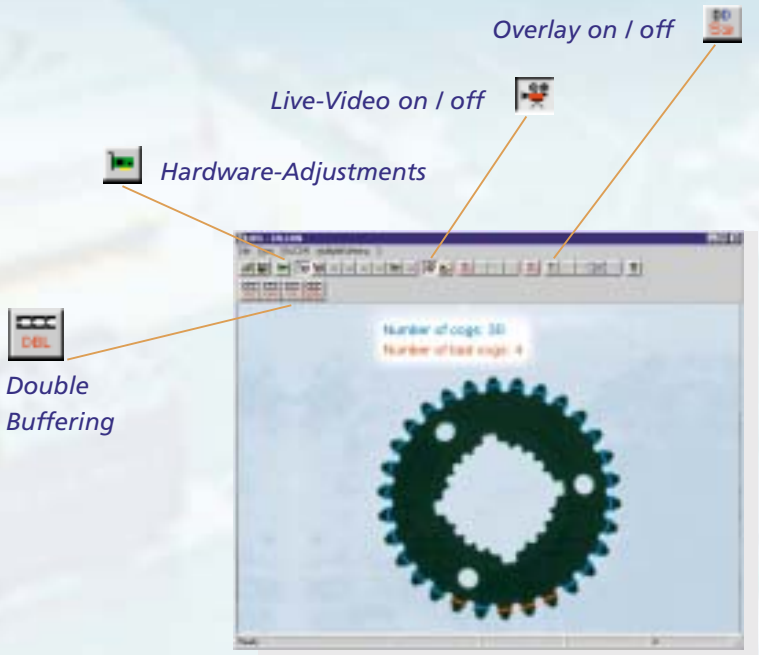
- PC plug in board
- Windows 95, 98, NT4.0, and Windows 2000 driver
- Documentation

Accessories

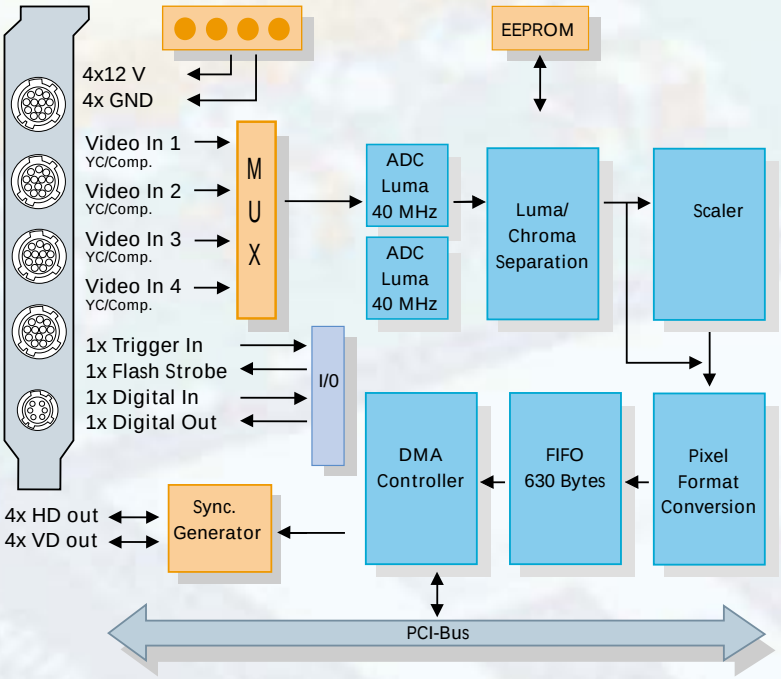
- We offer a wide range of video connection cables for industrial machine vision applications.

Software

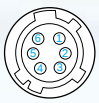
- Incl. source code



Block Diagram



1 GND
2 +12 V
3 VBS Y (GND)
4 VBS Y (signal)
5 HD output (GND)
6 HD output (signal)
7 VD output (signal)
8 C input (GND)
9 C input (signal)
10 GND
11 +12 V
12 VD output (GND)



1 Digital out
2 Flash Strobe
3 GND
4 Digital in
5 Trigger
6 +12 V

SDK Functions

- **Initializing and Termination**
  Setup and termination of connection to hardware
- **Image Digitization and Memory Management**
  Allocation of memory, handling of several image memories,...
- **Double and Multi Buffering**
  Setup of a memory sequence, ring buffering
- **Selection of Operation Modes and Readback of Adjustments**
  Setup, reset and adjustment of all FALCON/FALCONplus parameters
- **Reading and Writing the EEPROM**
- **Storage and Loading of Images**
- **Image Displaying**
- **Additional DirectDraw Functions**
  Overlay on/off, displaying the overlay, DD backbuffer mode, DD primary surface mode, DD overlay surface mode
- **Event Handling (Interrupt Controlled Image Digitizing)**

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