



FastCamera34

The FastCamera34 is a high-speed 640x480 pixel camera system based on a high-speed interline CCD. The camera includes a Nexperia PNX1502/PNX1702 image processor/FPGA/memory subsystem which can process image data from the sensor in real time. Image data and results can be returned over it's Camera Link interface. Programming tools allow this camera to be a customizable stand-alone image processing system for complex applications including object recognition, defect classification and customer imaging algorithms.



FastCamera34 Key Features:

- Resolution 640(H)x480(V)
- Interline Transfer CCD
- Pixel Size 7.4 um (H) x 7.4 um (V)
- 214 frames per second
- Aspect Ratio 4:3
- Output Sensitivity 30 uV/e
- Synchronous or Asynchronous Trigger
- 12 bit ADC
- Bayer pattern color or monochrome
- On board Nexperia PNX1502/PNX1702 @ 300/500 MHz
- 256 MB in-camera memory
- Xilinx 700/1400K gate Spartan user programmable FPGA
- FPGA memory
- Full range of software tools
- User programmable in C/C++
- Camera Link Interface
- 2 TTL Outputs
- 1 TTL trigger input
- Multiple optional user programmable RS485/RS422 bidirectional channels

SMART CAMERAS FOR IMAGING

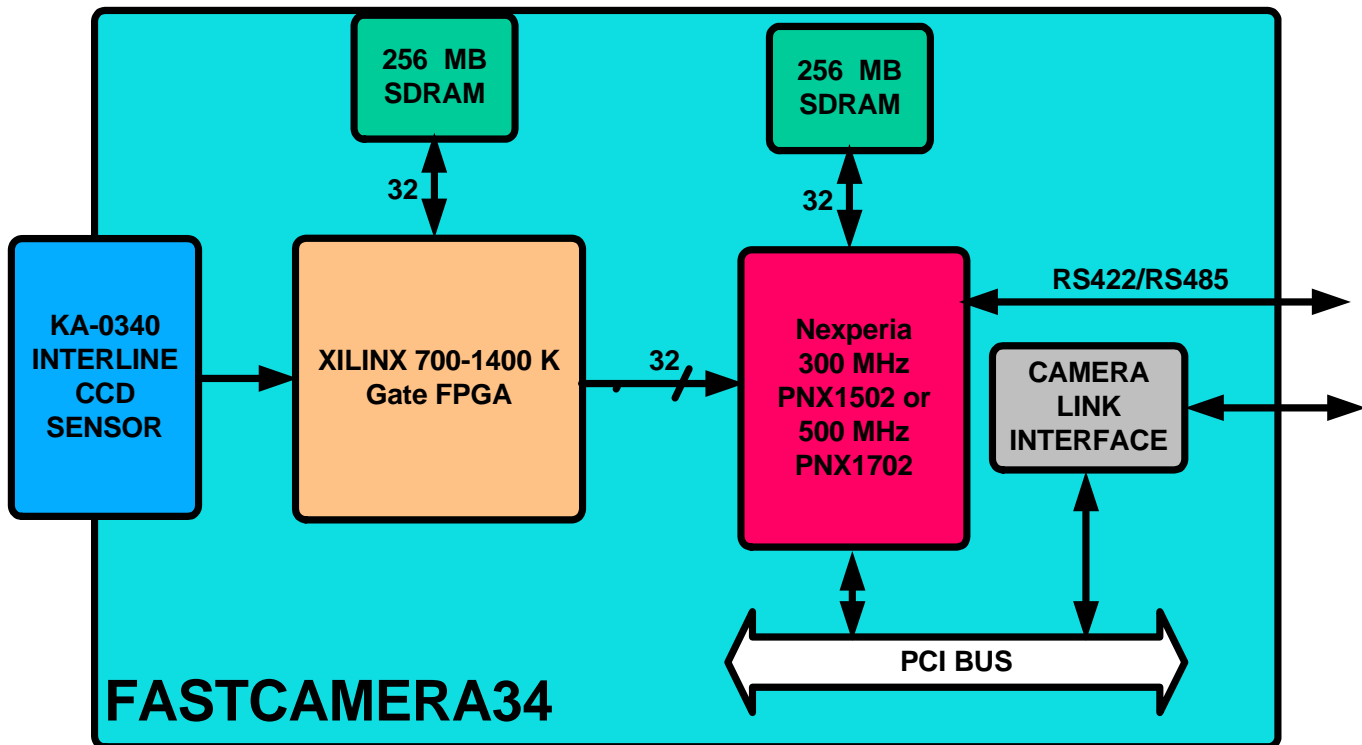
Modes of operation:

Hardware ROI, 640,228,164 (X) 480,164,55 (Y) centered . 40 MHz pixel clock, or 20 MHz pixel clock . Asynchronous or synchronous trigger and also free running. 85 MHz Camera Link interface with fixed exposure, external exposure control, or internal auto exposure control
The system can be provided with dedicated software to perform gauging, tooling and pattern matching in the camera. Thus providing a stand-alone system for real-time, flexible measurement and pattern analysis applications.

Application:

Recording: Internal storage for 500 frames 12 bit, 640x480, 800 frames 8 bit, 640x480, or 15,000 frames 8 bit, 288x55. Compression is available for 2:1 lossless and 10:1 Lossy.
This intelligent camera system is optimal for production line machine inspection, production line fast real-time event detection, laboratory microscopy, corporate and military research.

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PHYSICAL SPECIFICATIONS

- 26mm x 26mm x 100 mm
- 12 Pin Hirose Power Connector
- Camera Link port
- External Trigger In and Out (sync/async modes)
- 0 to 50 Degree C operating
- Weight 300 grams
- Power < 8 Watts
- C Mount Lens

SENSOR SPECIFICATIONS

- Resolution 640(H)x480(V)
- Interline Transfer CCD
- Pixel Size 7.4 um (H) x 7.4 um (V)
- Active area 4.74mm (H) x 3.55mm (V)
- Aspect Ratio 4:3
- Output Sensitivity 30 uV/e
- Antiblooming x100
- Vertical smear 80 db typical
- Charge transfer efficiency 99.999%
- Dark Current at Photodiode < 200 eps
- Photometric Sensitivity: Mono 3.61 V/lux-sec, Color 1.17(B), 1.54(G), 0.65(R) V/lux-sec
- Charge Capacity @ 40 MHz - 20,000 electrons and @ 20 MHz - 40,000 electrons
- Readout Noise @ 40 MHz - 16 electrons and @ 20 MHz - 14 electrons
- Dynamic Range @ 40 MHz - 62 dB (10.3 bits) and @ 20 MHz - 69 dB (11.5 bits)
- Maximum Pixel Clock Speed 40MHz
- Maximum Frame Rates with Two Taps @ 640 x 480 is 214 fps with an increase in FPS with decreasing resolution
- 12 bit ADC

IN-CAMERA PROCESSING OPTIONS

- Nexperia PNX1502/PNX1702 @ 300/500 MHz
- Xilinx user programmable Spartan FPGA
- FPGA memory
- Customer Programmable (C/C++)
- Image averaging (32 bit)
- By pixel gain and offset calibration
- Programmable ROI (via serial port)
- Image sub-sampling
- Convolution filtering
- Binarization with dynamic threshold
- VHDL customizable processing
- Processor provides Programmable Logic Controller Functions
- Super Framing for expanded dynamic range
- Blobs
- Real time image JPEG compression . Real time loss-less compression

OUTPUT SPECIFICATIONS

- 85 MHz Camera Link output
- 2 TTL Outputs
- 1 TTL trigger input
- Multiple user definable RS422/RS485 channels

