



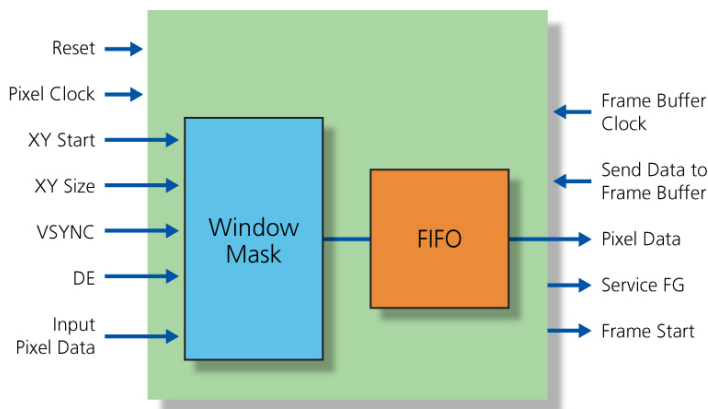
Frame Grabber Core



The Frame Grabber (FG) Core is used when only a portion (window) of a video source needs to be captured for display or processing.

A good application example is flight simulators. Flight simulators must emulate many small LCD-based instruments. Using the FG Core, a single computer can be set up to display all of the instruments in a mosaic pattern on a high-resolution display. Instead of sending the video to a single large display, a video processing board containing multiple instances of the FG Core receives the signal and breaks out the various “instruments” in the video frame into separate video channels. Each channel is configured to drive its respective small-format display at its native resolution.

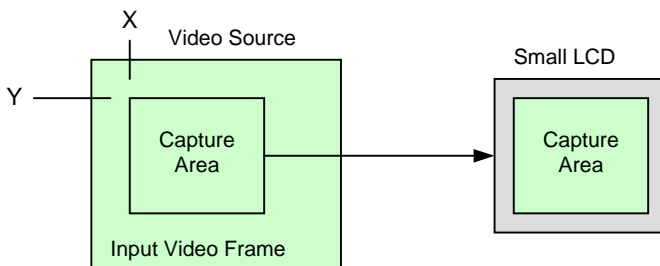
Block Diagram



XY Start and **XY Size** define the size and position of the capture window. Pixel data inside this window is passed on to the frame buffer. All other data is discarded. Additionally, XY Start and Size are sampled on each pixel clock cycle, so the window can be dynamically defined.

The Frame Grabber Core's predefined signals permit easy connection to Attodyne's Frame Buffer Core.

Example Application



Features

Capture Video Sub-Window

- 4 levels of alpha-blending
- Full 24-bit RGB support

Dynamic Configuration

- Redefine capture window on the fly
- Enables image stabilization applications

Simple Interface to Frame Buffer

- Use Attodyne's FB Core

FPGA Resource-Friendly

- Optimized core
- Big results for few resources

Applications

- Flight Simulators
- Product Mockup
- Image stabilization
- Industrial control
- Military



Frame Grabber Core



Device Utilization

Family	Device	Tiles	Clock Globals	I/Os	PLLs	Block RAM	Utilization	Power Consumption
IGLOO™	AGL125	142	1	56	0	2	4.7%	TBD
ProASIC®3	A3P125	142	1	56	0	2	4.7%	TBD
Fusion	AFS250	142	1	56	0	2	2.1%	TBD

Deliverables

- Complete IP Datasheet
- Actel Optimized Netlist
 - Netlist for target FPGA in EDIF, Verilog, or VHDL format
- RTL Source Code:
 - VHDL or Verilog source code
 - Functional verification testbench
 - Complete Libero® Integrated Design Environment (IDE) project

About Attodyne

As an Actel Solution Partner, Attodyne licenses IP cores relating to the processing, transmission, distribution, and display of video data. Attodyne's design experience and capabilities span from ultra-low noise analog circuits to 4Gbps fiber optic communications; however, video-related FPGA work is its primary focus. In addition to licensing IP cores, Attodyne also offers reference designs, prototypes, design consultation, and product development.

Attodyne will help guide you early in your project to extract the maximum feature set and performance that will minimize design cost for both hardware and firmware/software. Attodyne recommends Actel's FPGAs, as Actel's flash-based FPGA architecture is uniquely suited to video/LCD applications. Actel also provides superior support and creative flexibility to match its customer's needs. Due to a close working relationship with Actel, Attodyne has extensive knowledge of its flash FPGAs as well as Actel's roadmap. This base of knowledge is extremely important when making long-term product and manufacturing decisions.