



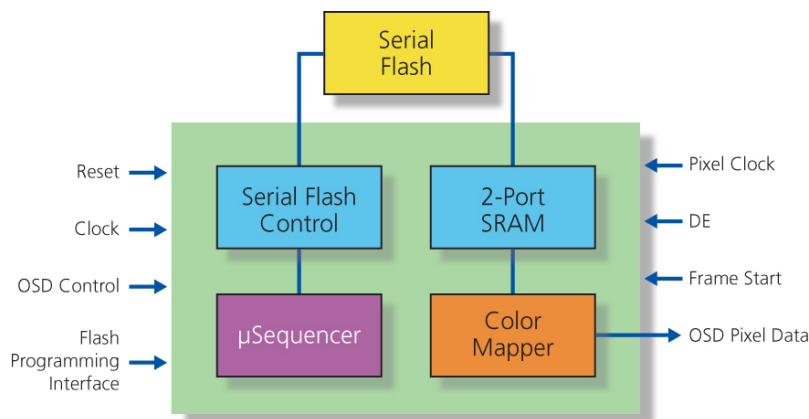
## On-Screen-Display Core



The On-Screen-Display (OSD) Core is used anytime supplemental user information must be displayed. Applications include menu navigation, image telemetry, and system control.

A micro-sequencer facilitates both programming of the flash and autonomous control of OSD functions. OSD sprites are stored in serial flash with size and color-mapping information. The micro-sequencer retrieves a sprite from flash and positions it in the OSD SRAM with a location vector.

### Block Diagram



## Features

### Autonomous Control

- External MCU is not required
- Internal micro-sequencer

### Sprite-Based OSD

- Supports both text and graphics
- Dynamic sprite sizes

### Resource-Friendly

- 16-16 M color mapping
- Micro-sequencer uses less than 200 tiles

### Configurable OSD Window Size

- Scale to application
- Move window dynamically
- Multiple window instances

## Applications

- Video surveillance monitor
- Menu navigation
- Image telemetry
- Hand-held devices
- Kiosks

System events queue the OSD through the OSD Control interface. From there, the micro-sequencer takes over and manipulates the OSD overlay according to micro-code saved in the flash. To save block RAM resources, only sixteen different colors can be displayed at a time. Each of the colors is mapped to any of sixteen million colors via the color mapper.

Applications have diverse OSD requirements and no single OSD core can satisfy all. For this reason, Attodyne offers a suite of OSD cores from the very simple to the very sophisticated. Please contact Attodyne to discuss your OSD needs.



## On-Screen-Display Core



### Device Utilization

Family	Device	Tiles	Clock Globals	I/Os	PLLs	Block RAM	Utilization
IGLOO™	AGL125	681	2	43	0	2-8	22.5%
ProASIC®3	A3P125	681	2	43	0	2-8	22.5%
Fusion	AFS250	681	2	43	0	2-8	11.3%

### 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 4 Gbps 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 that will minimize the 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.